Health of King County 2006

Chapter 6: Chronic Disease

Public Health
Seattle & King County
HEALTHY PEOPLE. HEALTHY COMMUNITIES.

Introduction

Chronic diseases are among the leading causes of death and disability. They are generally characterized by multiple risk factors, a long development period, a prolonged course of illness, and increased onset with age. In this chapter, we examine heart disease, cancer, stroke, chronic lower respiratory disease (CLRD), diabetes, and chronic liver disease and cirrhosis. In 2003, these diseases accounted for 65% of the total deaths in King County.

Chronic Diseases, Age-adjusted Death Rate, Number, and Rank, 2003*

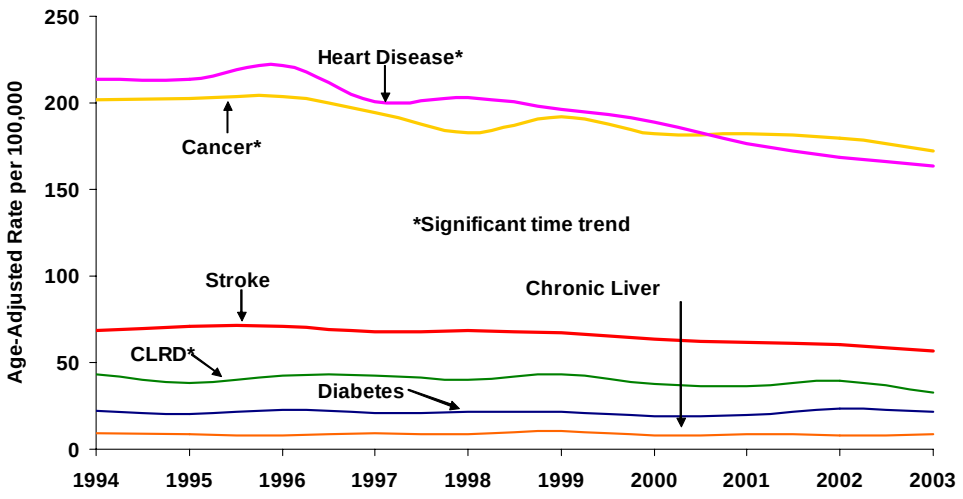
	King County			WA State			US	
	Rate	#	Rank	Rate	#	Rank	Rate	Rank
Cancer	172.1	2816	1	190.1	11043	2	189.3	1
Heart Disease	163.7	2714	2	190.5	11154	1	232.1	2
Stroke	57.1	946	3	61.5	3588	3	53.6	3
CLRD	32.4	520	5	46.4	2648	4	43.2	4
Diabetes	21.7	356	7	20.1	1509	7	25.2	6
Chronic liver disease	8.7	154	10	9.2	565	10	9.2	12

*death rate is age adjusted to the 2000 U.S. population. Rank is among the leading causes of death.

Trends and Patterns for King County and Regions

- In 2001, cancer surpassed heart disease in the total number of deaths and became the number one cause of death in King County.
- The age-adjusted death rates for cancer, heart disease, stroke, and CLRD declined significantly between 1994 and 2003. The death rates for diabetes and chronic liver disease/ cirrhosis were unchanged during the 10 year period.

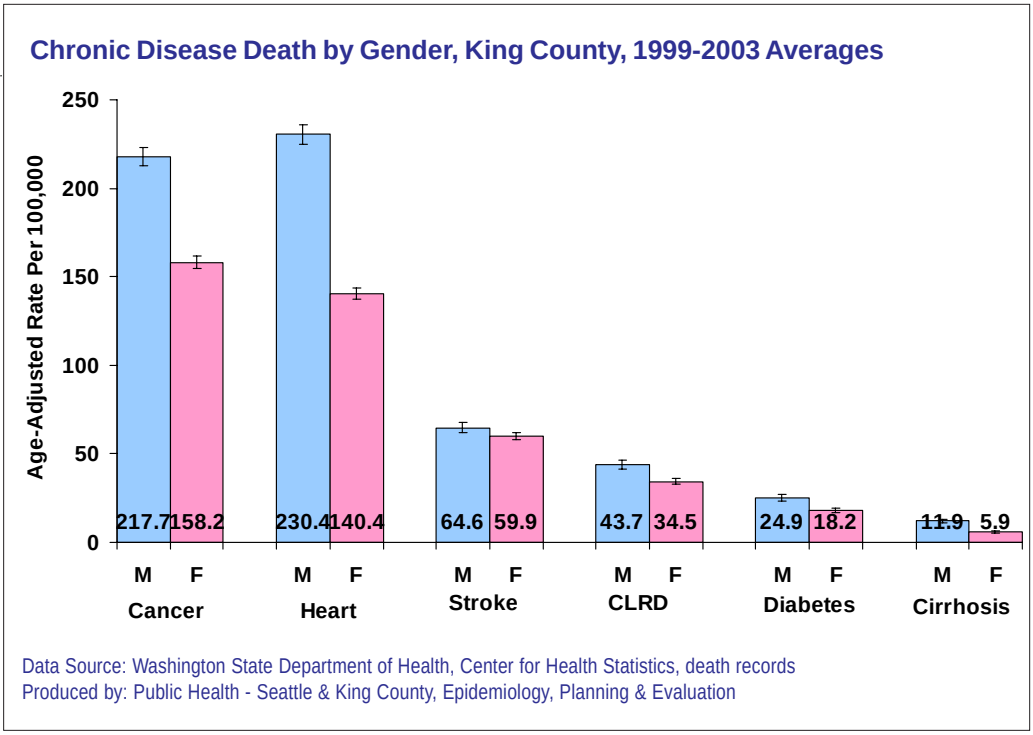
Time Trends for Chronic Disease Death, King County 1994-2003



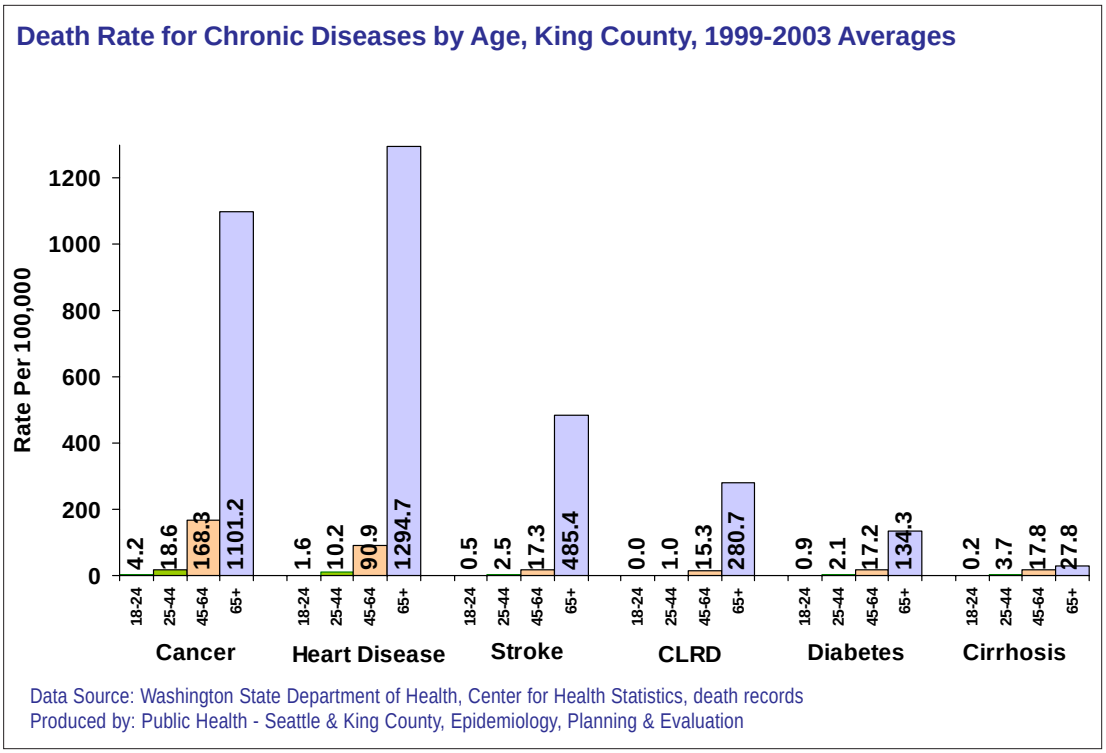
Data Source: Washington State Department of Health, Center for Health Statistics, death records
Produced by: Public Health - Seattle & King County, Epidemiology, Planning & Evaluation

Age-Adjusted Death Rate for Chronic Diseases by Gender, 1999-2003 Averages

- Among the six chronic diseases, except for stroke, the male death rate was significantly higher than the female death rate.



Age-Adjusted Death Rate for Chronic Diseases by Age, 1999-2003 Averages



- The death rates for the 65 and over age group are substantially higher than the younger groups.
- For chronic liver disease and cirrhosis, the 45-64 age group had a relatively higher rate.

Heart Disease

Heart disease is the second leading cause of death in King County, only recently surpassed by cancer. Coronary heart disease (CHD) is the most common form of heart disease. Other heart conditions, such as congestive heart failure or sudden cardiac death, are often the result of CHD.

Risk factors for coronary heart disease include cigarette smoking, physical inactivity, obesity, high blood pressure, diabetes, high blood cholesterol, and lack of social support.

The 2004 BRFSS data show that 4.6%, or about 40,000 King County adults have coronary heart disease. Among older adults age 65 and over, the prevalence is 20.2%.

Averaged over 1998-2002, there were 14,346 hospitalizations per year for heart disease among King County residents.

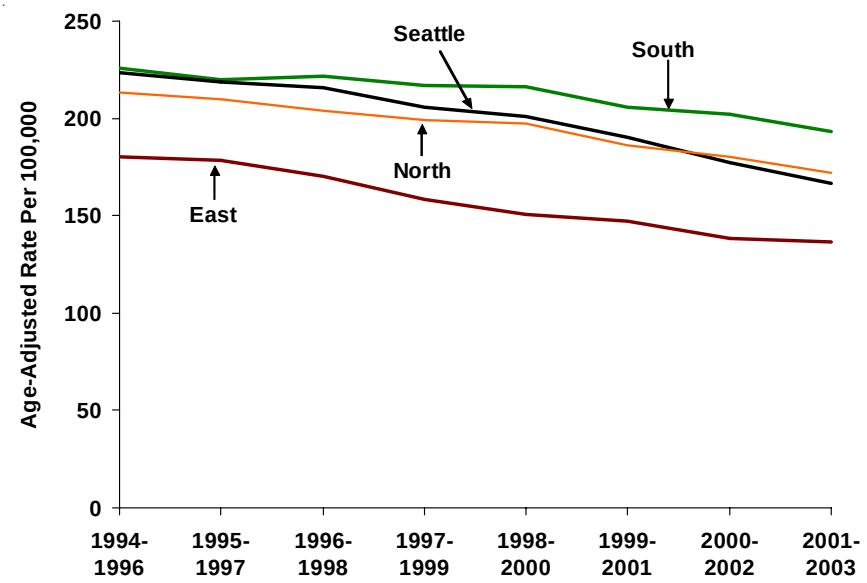
In 2003, 2,714 heart disease deaths occurred among King County residents. CHD accounted for 74% (n=2005) of the total heart disease deaths.

See Public Health Core Indicators for Seattle & King County for more information.

King County and Regions

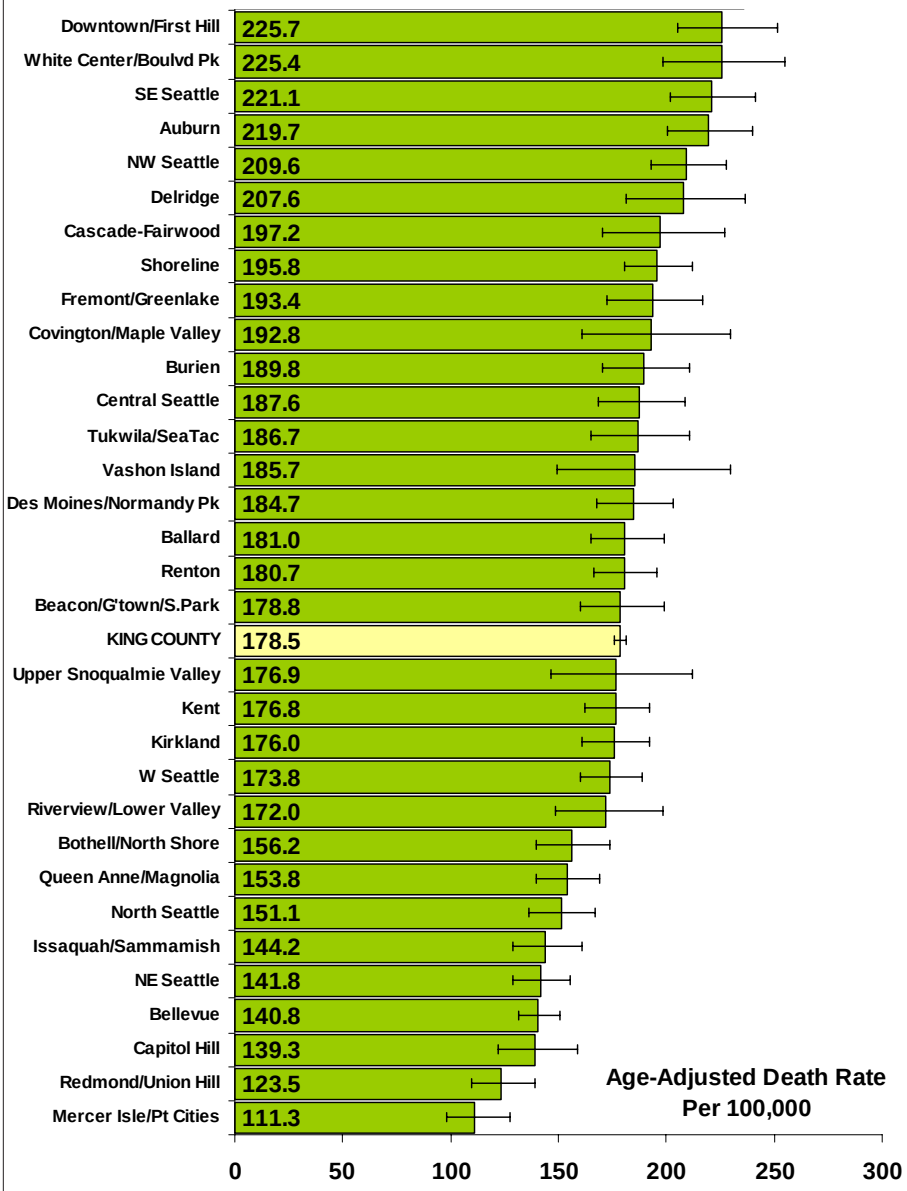
- Between 1994 and 2003, the age-adjusted heart disease death rate in King County declined 23%. The decline was significant among all four regions.
- Compared to the other regions, the East Region had a significantly lower rate while the South Region had significantly higher rate.

Heart Disease Death Rate in King County by Region, Three-Year Rolling Averages, 1994-2003



Data Source: Washington State Department of Health, Center for Health Statistics, Death Certificates
Produced by: Public Health - Seattle & King County, Epidemiology, Planning, and Evaluation

Heart Disease Death Rate in King County by Health Planning Area, 1999-2003 Averages



Data Source: Death Certificate Data: Washington State Department of Health, Center for Health Statistics.
Produced by: Public Health - Seattle & King County, Epidemiology, Planning, and Evaluation

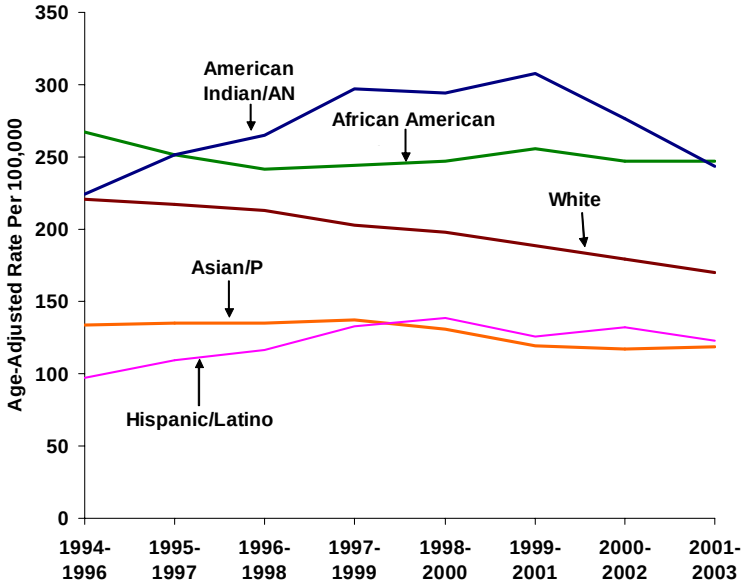
Patterns by Health Planning Area

- Among the Health Planning Areas, the highest death rates were in Southeast County, Federal Way, Downtown/ First Hill, White Center/ Boulevard Park, and Southeast Seattle while the lowest death rates were in Mercer Island/ Point Cities, Redmond/ Union Hill, Capitol Hill, Bellevue, and Northeast Seattle.
- The death rate in Southeast County was more than twice the rate in Mercer Island/Point Cities.

Focus on Disparities

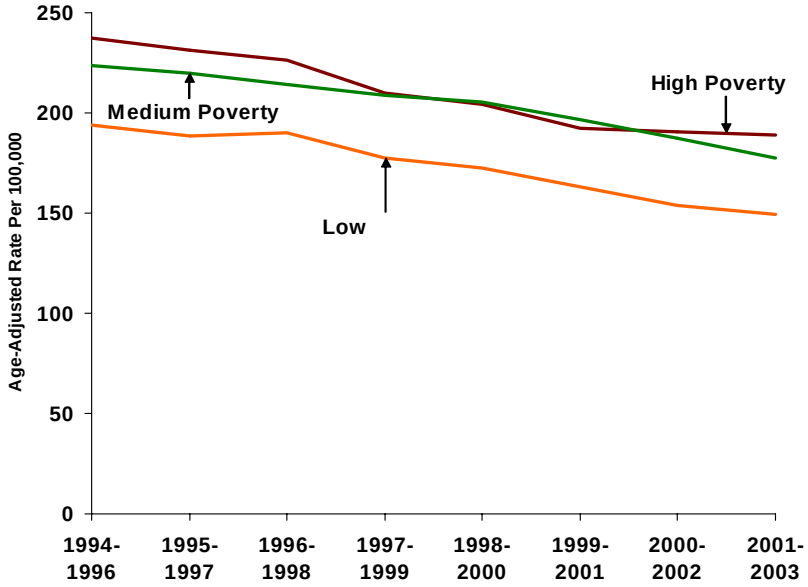
- Compared to whites, African Americans and American Indian/Alaska Natives had significantly higher death rates while Asian/Pacific Islanders and Hispanic/Latinos had significantly lower rates.
- Between 1994 and 2003, while the death rate declined significantly among whites and Asian/Pacific Islanders, there was no significant change in the death rate among African Americans, American Indian/Alaska Natives, and Hispanic/Latinos.
- During 1994 to 2003, although the death rate declined in both the high and low poverty areas, the gap between them remained at the same magnitude. The declining trend in high poverty areas leveled off in recent years.

Heart Disease Death Rate in King County by Race/Ethnicity, Three-Year Rolling Averages, 1994-2003



Data Source: Washington State Department of Health, Center for Health Statistics, Death Certificates
Produced by: Public Health - Seattle & King County, Epidemiology, Planning, and Evaluation

Heart Disease Death Rate in King County by Neighborhood Poverty Level Three-Year Rolling Averages, 1994-2003



Data Source: Washington State Department of Health, Center for Health Statistics, Death Certificates
Produced by: Public Health - Seattle & King County, Epidemiology, Planning, and Evaluation

Cancer

Since 2001, cancer, surpassing heart disease, has become the number one cause of death in King County.

In 2003, 2,816 King County residents died from cancer.

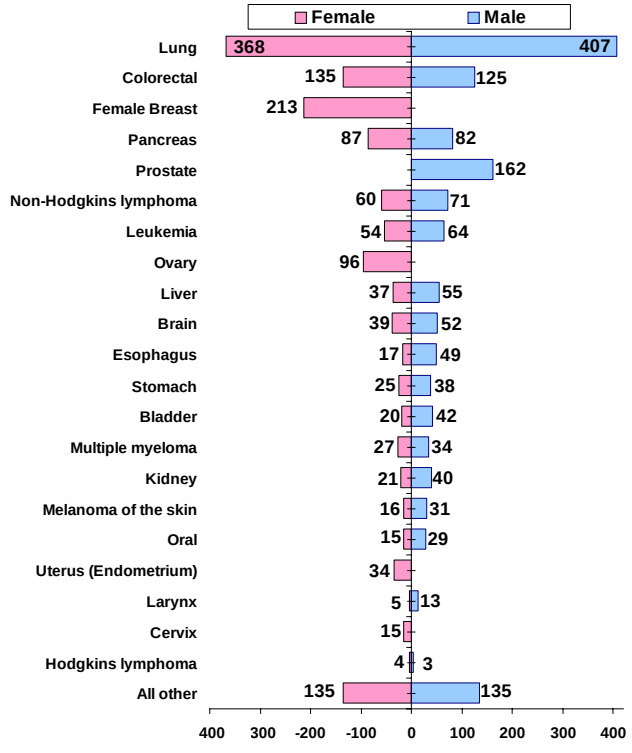
In 2002, 8,046 new cases of cancer were diagnosed among King County residents.

The most common types of cancer death include lung cancer, colorectal cancer, female breast cancer, pancreas cancer, and prostate cancer.

The most prevalent cancers by diagnosis are female breast cancer, prostate cancer, lung cancer, colorectal cancer, and melanoma of the skin.

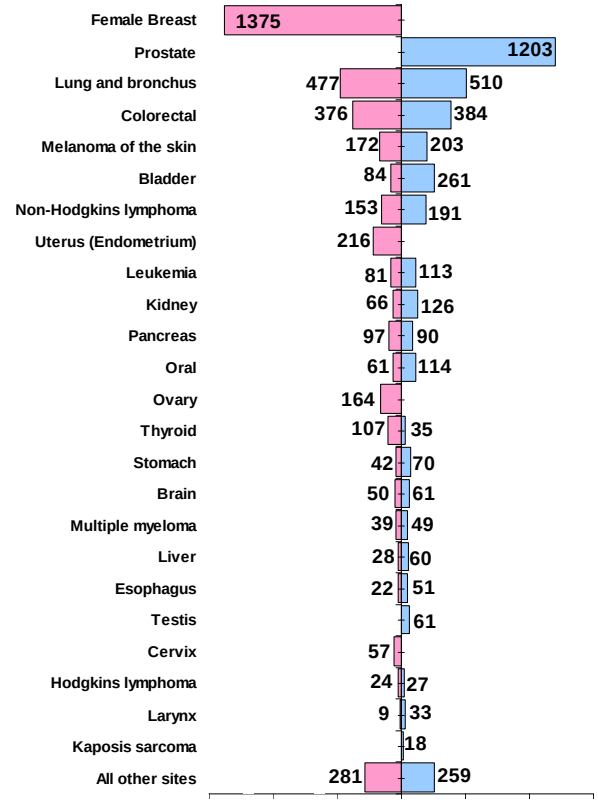
Many cancers can be prevented by reducing the risk factors, or cured by early detection.

Number of Cancer Deaths Per Year Among King County Residents, Five-Year Averages, 1999-2003



Data Source: Washington State Department of Health, Center for Health Statistics, Death Certificates.
Produced by: Public Health - Seattle & King County, Epidemiology, Planning, and Evaluation

New Cancer Cases Per Year Among King County Residents, Five-Year Averages, 1998-2002

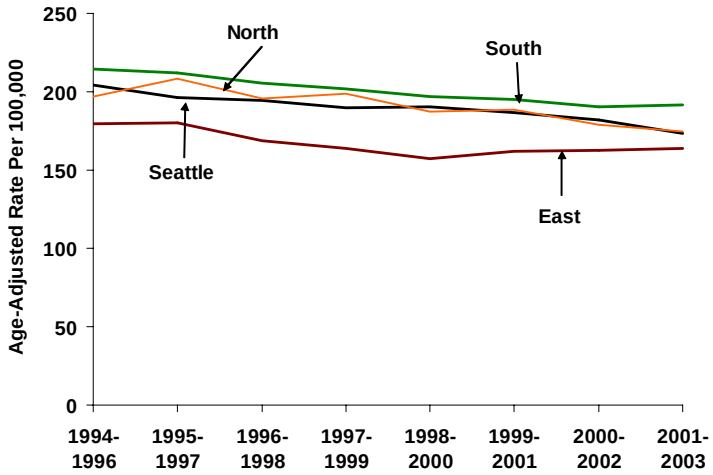


Data Source: Washington State Cancer Registry.
Produced by: Public Health - Seattle & King County, Epidemiology, Planning, and Evaluation

King County and Regions

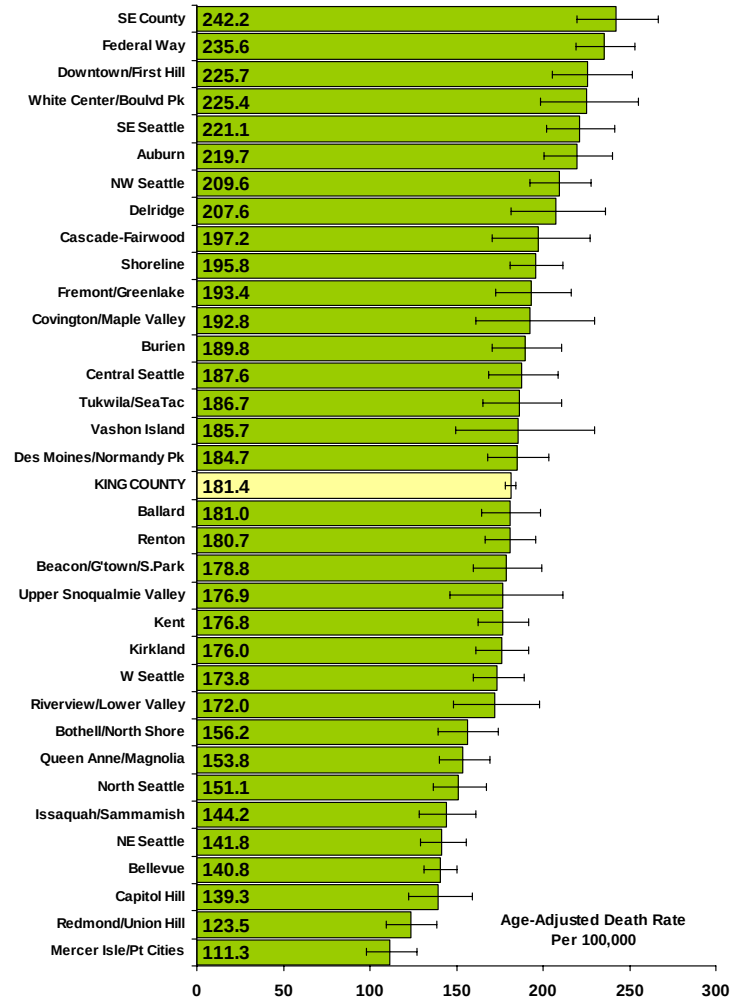
- Between 1994 and 2003, the all cancer death rate in King County declined significantly by 15% (data not shown) and the decline was significant among all four regions.
- The all cancer death rate has been consistently lower in the East Region but consistently higher in the South Region.

All Cancer Death Rate in King County by Region, Three-Year Rolling Averages, 1994-2003



Data Source: Washington State Department of Health, Center for Health Statistics, Death Certificates
Produced by: Public Health - Seattle & King County, Epidemiology, Planning, and Evaluation

Cancer Death Rate in King County by Health Planning Area, 1999-2003 Averages



Data Source: Washington State Department of Health, Center for Health Statistics, Death Certificates
Produced by: Public Health - Seattle & King County, Epidemiology, Planning, and Evaluation

Patterns by Health Planning Area

- The differences in the all cancer death rate among the health planning areas are relatively small.
- Compared to the King County average, the all cancer death rates in Covington/Maple Valley, Central Seattle, and Auburn were significantly higher while Mercer Island/Point Cities and Bellevue were significantly lower.

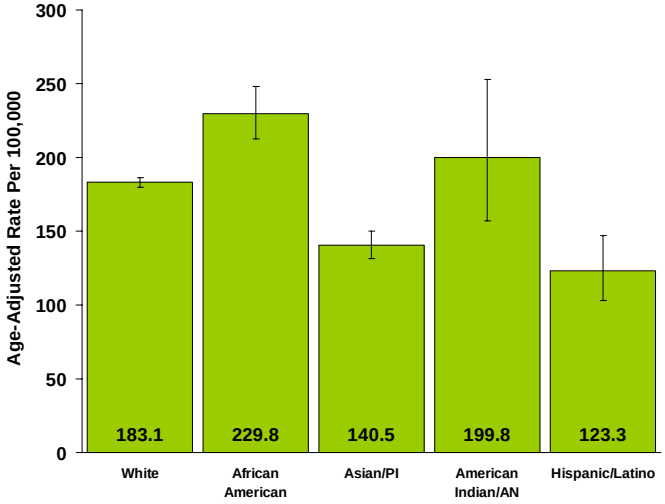
Focus on Disparities

- Between 1994 and 2003, the all cancer death rate declined significantly among whites and African Americans (data not shown). However, African Americans continue to have the highest death rate.

Stage at Diagnosis and Survival

Survival after cancer diagnosis is highly associated with the stage at diagnosis. In general, cancers diagnosed and treated at an earlier stage have a better chance to be cured. Effective screening methods for early detection exist for breast, cervical, and colorectal cancers. The following tables summarize the incidence and the five-year relative survival rate[1] for the major types of cancer by their stage at diagnosis.

All Cancer Death Rate in King County by Race/Ethnicity, Five-Year Averages, 1999-2003



Data Source: Washington State Department of Health, Center for Health Statistics, Death Certificates
Produced by: Public Health - Seattle & King County, Epidemiology, Planning, and Evaluation

Cancer Incidence (New Cases of Diagnosis, Invasive only) and 5-Year Relative Survival Rate Among King County Residents by Stage

	New Cases 1998-2002 Total					Percent of Total				5-Year Relative Survival Rate (%)*				
Site	Total	Local	Reg.	Distant	Un-staged	Local	Reg.	Distant	Un-staged	Local	Reg.	Distant	Un-staged	All
Bladder	730	504	128	62	36	69.0	17.5	8.5	4.9	97.2	49.6	5.7	40.4	84.2
Brain	552	354	135	5	58	64.1	24.5	0.9	10.5	NA	NA	NA	NA	34.4
Breast (female)	6816	4379	2019	253	165	64.2	29.6	3.7	2.4	99.2	83.6	22.4	53.9	89.9
Cervix	284	149	102	21	12	52.5	35.9	7.4	4.2	93.1	51.8	19.6	65.2	72.9
Colorectal	3770	1259	1610	669	232	33.4	42.7	17.7	6.2	96.8	69.2	9.5	33.3	65.3
Endometrium	1069	773	179	78	39	72.3	16.7	7.3	3.6	98.8	69.8	22.9	47.7	89.9
Esophagus	357	68	125	95	69	19.0	35.0	26.6	19.3	41.8	11.7	NA	12.0	15.3
Hodgkins lymphoma	254	31	122	88	13	12.2	48.0	34.6	5.1	92.2	91.1	74.4	72.2	84.8
Kaposi's sarcoma	89	23	21	18	27	25.8	23.6	20.2	30.3	NA	NA	NA	NA	28.1
Kidney and renal pelvis	954	565	146	185	58	59.2	15.3	19.4	6.1	90.1	63.1	10.6	31.9	63.3
Larynx	209	120	68	12	9	57.4	32.5	5.7	4.3	86.8	54.7	NA	53.4	70.6
Liver	434	140	127	54	113	32.3	29.3	12.4	26.0	19.7	5.2	7.4	NA	9.3
Lung and bronchus	4907	793	1212	2360	542	16.2	24.7	48.1	11.0	56.4	14.9	2.3	5.9	16.5
Melanoma of the skin	1859	1645	110	55	49	88.5	5.9	3.0	2.6	98.6	67.3	6.3	94.1	93.5
Multiple myeloma	436	23		402	11	5.3	0.0	92.2	2.5	67.5	NA	30.3	NA	32.7
Non-Hodgkins lymphoma	1710	427	229	839	215	25.0	13.4	49.1	12.6	68.8	67.1	50.0	62.8	59.3
Oral cavity and pharynx	869	317	433	74	45	36.5	49.8	8.5	5.2	86.1	55.9	22.4	48.0	63.3
Ovary	811	167	112	489	43	20.6	13.8	60.3	5.3	94.8	56.5	29.0	21.4	45.3
Pancreas	929	67	300	413	149	7.2	32.3	44.5	16.0	21.1	7.2	1.2	1.6	4.6
Prostate**	5976	4400	1143	311	122	73.6	19.1	5.2	2.0	100.0	NA	28.1	84.1	100
Stomach	559	101	194	178	86	18.1	34.7	31.8	15.4	70.3	20.3	2.6	11.4	21.8
Testis	298	225	51	20	2	75.5	17.1	6.7	0.7	99.2	93.8	75.4	100.0	96.3
Thyroid	704	444	228	26	6	63.1	32.4	3.7	0.9	99.5	93.4	72.8	85.1	96.9

*For cases diagnosed between 1993 and 1997. **Survival rate for local and regional are combined for prostate cancer.

Leukemia Incidence and 5-Year Relative Survival Rate among King County Residents by Type

	New Cases, 1998-2002	Percent	5-year relative survival (%)*
Acute Lymphocytic	88	10.9	69.1
Chronic Lymphocytic	254	31.4	83.1
Acute Myelocytic	239	29.6	18.2
Chronic Myelocytic	121	15.0	47.2
All other types	106	13.1	NA
All Leukemia	808	100.0	54.0

*For cases diagnosed between 1993 and 1997.

References

[1] Relative survival rate is a net survival measure representing cancer survival in the absence of other causes of death.

Lung Cancer

Lung cancer is the leading cause of cancer death.

The most important risk factor for lung cancer is cigarette smoking, causing 78% of the lung cancer deaths.

In 2003, there were 806 lung cancer deaths among King County residents, accounting for 29% of all cancer deaths.

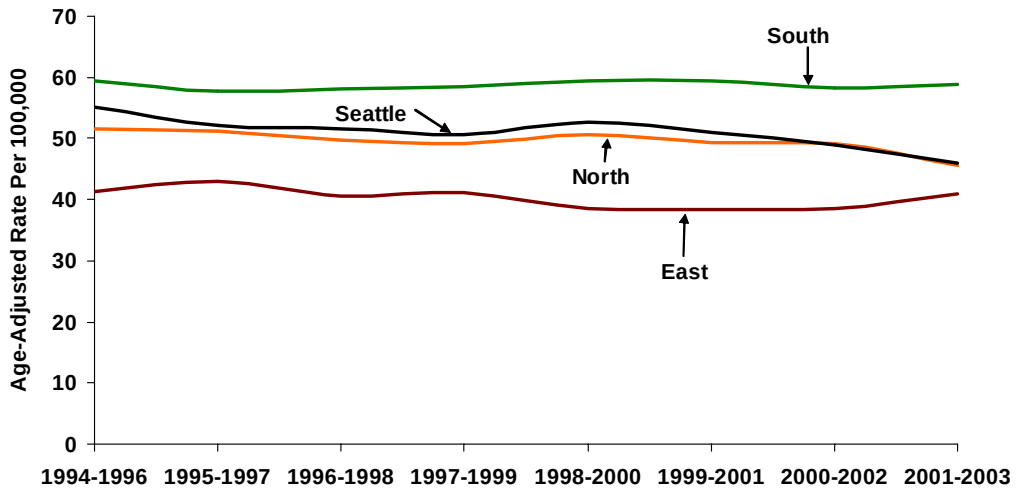
In 2002, 964 new cases of lung cancer were diagnosed among King County residents.

The five-year relative survival rate for lung cancer in King County was 16.5%.

King County and Regions

- Between 1994 and 2003, the lung cancer death rate in King County declined significantly by 7.7% due to a 15.8% decline among males (data not shown).
- Among the four regions, only Seattle had a significant decline during the period.
- The South Region had the highest death rate while the East Region had the lowest death rate throughout the ten year period.

Lung Cancer Deaths by Region
King County, 3-Year Rolling Averages, 1994-2003

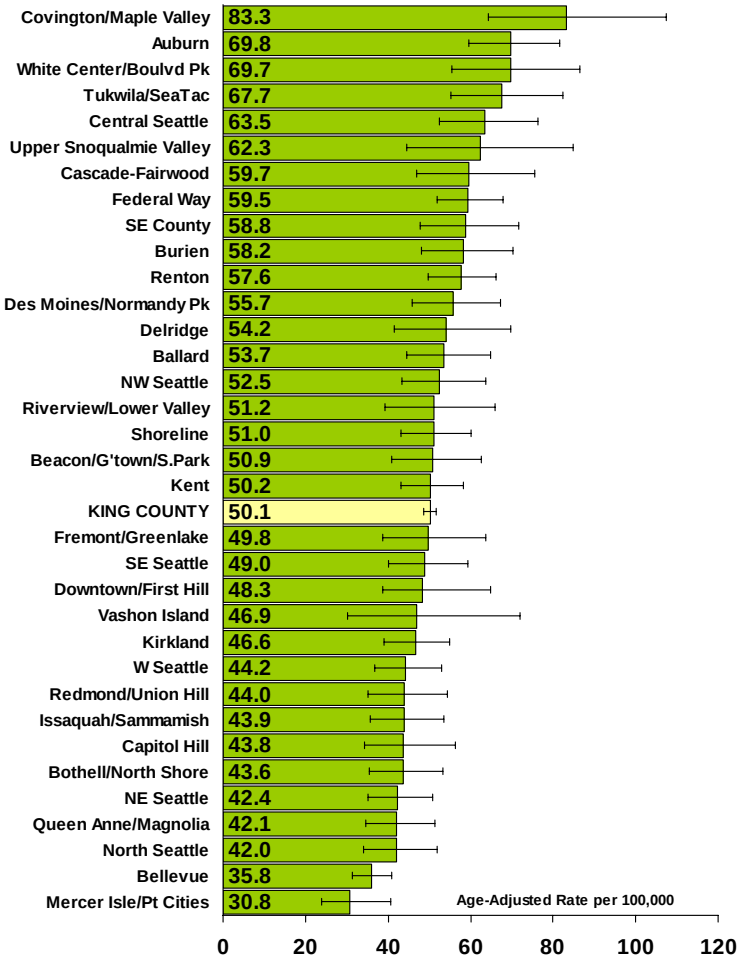


Data Source: Washington State Department of Health, Center for Health Statistics, Death Certificates
Produced by: Public Health - Seattle & King County, Epidemiology, Planning & Evaluation

Patterns by Health Planning Area

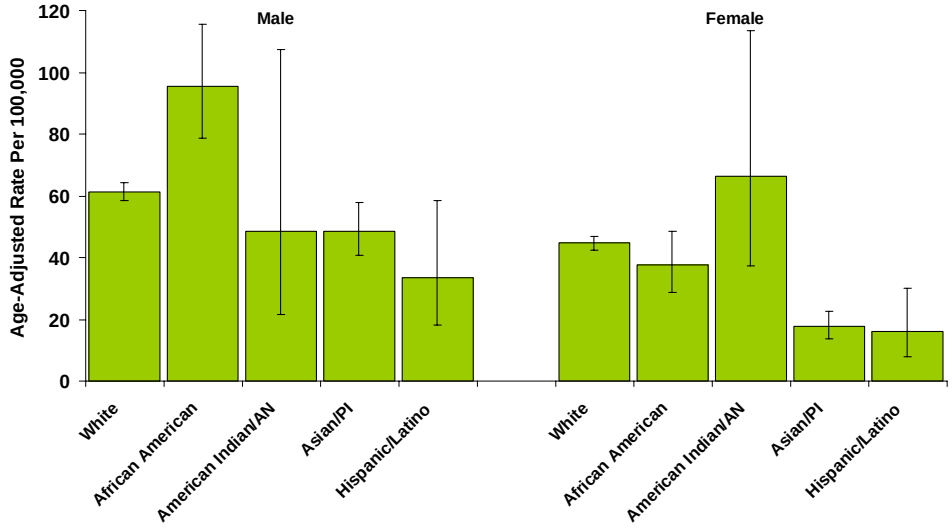
- The highest lung cancer death rates were in Covington/Maple Valley, Auburn, White Center/Boulevard Park, Tukwila/SeaTac, and Central Seattle. The death rates in Mercer Island/Point Cities and Bellevue were significantly lower than the county average rate.
- The death rates in health planning areas are highly correlated with current smoking prevalence rates (r=0.71).

Lung Cancer Death By Health Planning Area King County, Five-Year Average, 1999-2003



Data Source: Washington State Department of Health, Center for Health Statistics, Death Records
Produced by: Public Health - Seattle & King County, Epidemiology, Planning, and Evaluation

Lung Cancer Death Rate in King County by Gender and Race/Ethnicity Five-Year Averages, 1999-2003



Data Source: Washington State Department of Health, Center for Health Statistics, Death Certificates
Produced by: Public Health - Seattle & King County, Epidemiology, Planning, and Evaluation

Focus on Disparities

- Among the racial/ethnic groups, only whites had a significant decline in the lung cancer death rate between 1999 and 2003.
- Among males, the death rate among African Americans was signifi-cantly higher than the white rate. Native American females had higher death rate than the other racial/ethnic groups but the difference was not statistically significant.

Colorectal Cancer

(Cancer of the Colon and Rectum)

Colorectal cancer is the second leading cause of cancer death in King County.

In 2003, 233 King County residents, 104 males and 129 females, died from colorectal cancer.

In 2002, 736 new cases of colorectal cancer were diagnosed among King County residents.

The overall five-year relative survival rate for colorectal cancer in King County was 65.3%.

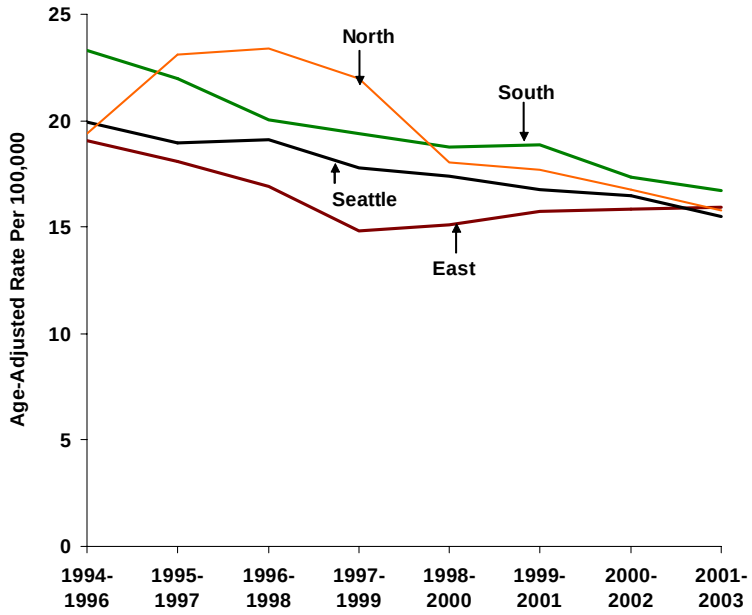
Screening for colorectal cancer can reduce mortality and it is recommended that men and women age 50 and older be screened for colorectal cancer.[1]

See Public Health Core Indicators for Seattle & King County for more information.

King County and Regions

- Between 1994 and 2003, the colorectal cancer death rate declined significantly by 29% in King County.
- Among the four regions, a significant decline occurred in Seattle and the South Region, but not in the East and the North regions.
- During 2001 and 2003, the colorectal cancer death rate was similar among the four regions.

Colorectal Cancer Death Rate in King County by Region, Three-Year Rolling Averages, 1994-2003

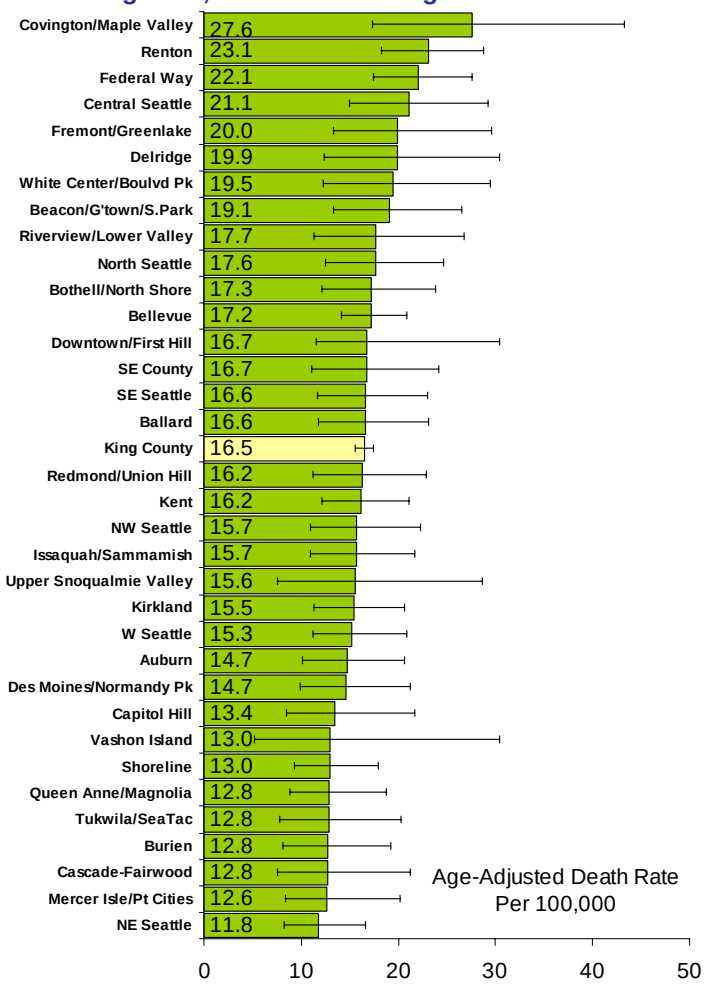


Data Source: Washington State Department of Health, Center for Health Statistics, Death Certificates
Produced by: Public Health - Seattle & King County, Epidemiology, Planning, and Evaluation

Patterns by Health Planning Area

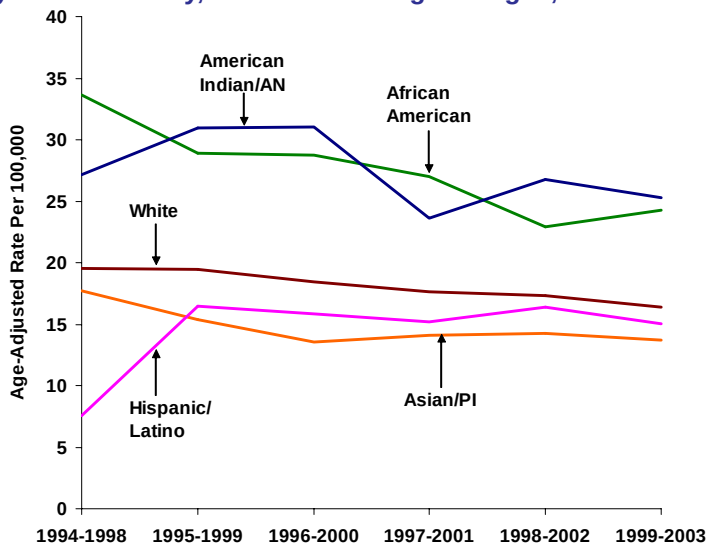
- Covington/Maple Valley, Renton, and Federal Way had the highest colorectal cancer death rate.
- The death rates in the other health planning areas were not significantly different from the county average rate.

Colorectal Cancer Death Rate in King County by Health Planning Area, 1999-2003 Averages



Data Source: Death Certificate Data: Washington State Department of Health, Center for Health Statistics
Produced by: Public Health - Seattle & King County, Epidemiology, Planning, and Evaluation

Colorectal Cancer Death Rate in King County by Race/Ethnicity, Five-Year Rolling Averages, 1994-2003



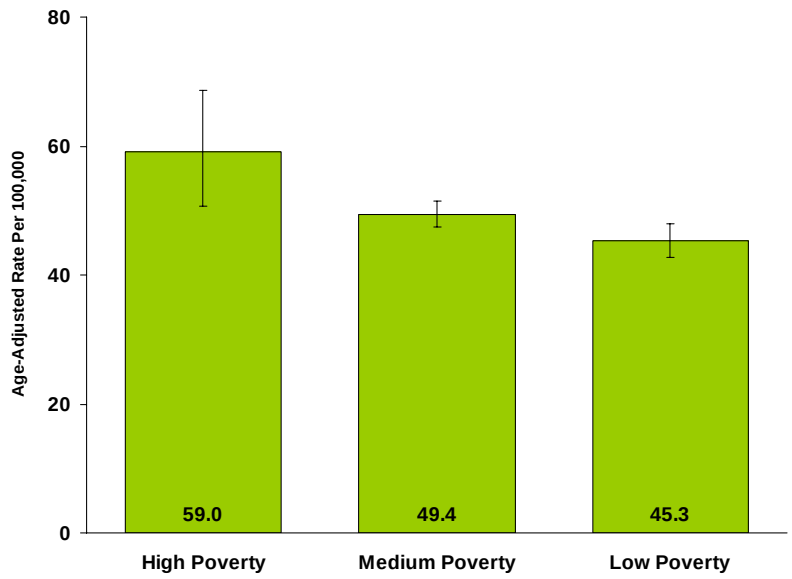
Data Source: Washington State Department of Health, Center for Health Statistics, Death Certificates
Produced by: Public Health - Seattle & King County, Epidemiology, Planning, and Evaluation

Focus on Disparities

- The colorectal cancer death rate declined significantly among whites and African Americans between 1994 and 2003.
- However, the African American rate remained significantly higher than the white rate.
- The death rate among American Indian/Alaska Native was similar to the higher rate for African Americans but it was not significantly different from the white rate because of small numbers.
- The colorectal cancer incidence rate was also the highest among African Americans and American Indians/ Alaska Natives (data not shown).

- The incidence rate was significantly higher in high poverty areas.

Colorectal Cancer (Invasive) Incidence Rate in King County by Neighborhood Poverty Level, Five-Year Averages, 1999-2003



Data Source: Washington State Cancer Registry
Produced by: Public Health - Seattle & King County, Epidemiology, Planning, and Evaluation

Screening

It is recommended that men and women age 50 or older be screened for colorectal cancer. Tests commonly used for colorectal cancer screening include the fecal occult blood test (FOBT), flexible sigmoidoscopy, and colonoscopy.

The 2004 Behavioral Risk Factor Surveillance System (BRFSS) data show that among King County adults age 50 and over, 24% had an FOBT within 1 year, 50% had a sigmoidoscopy or colonoscopy within 5 years, and 58% had either of these tests. For colonoscopy only, 36% had the screening within 10 years. Among uninsured adults age 50-64, the screening rates were significantly lower.

Colorectal Cancer Screening Rates Among King County Adults Age 50+, 2004

	Percent	95% Conf. Interval
Total (age 50+, 2004)		
-Had an FOBT within 1 year	23.9	21.4 -26.7
-had a sigmoidoscopy/colonoscopy within 5 years	50.4	47.2 -53.5
-Had either of the above	57.7	54.5 – 60.8
-Had a colonoscopy within 10 years	36.4	33.4 – 39.4
Uninsured (age 50-64, 2002, 2004 average)		
-Had an FOBT within 1 year	11.2	5.6 – 21.3
-had a sigmoidoscopy/colonoscopy within 5 years	17.4	10.1 – 28.4
-Had either of the above	23.2	14.6 – 34.7
-Had a colonoscopy within 10 years	11.2	4.7 – 24.6

References

[1] U.S. Preventive Services Task Force (USPSTF): Screening for Colorectal Cancer. July 2002. www.ahcpr.gov/clinic/uspstf/uspscolo.htm

Female Breast Cancer

Breast cancer is the second leading cause of cancer deaths among females.

In 2003, 220 King County women died from breast cancer.

In 2002, 1,387 new cases of breast cancer were diagnosed.

The overall five-year relative survival rate among women diagnosed for breast cancer was 90%.

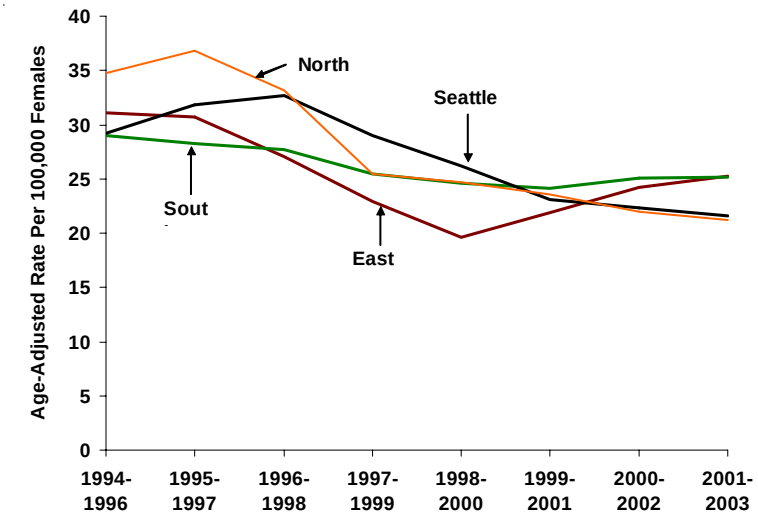
Screening for breast cancer can reduce mortality. It is recommended that women age 40 and older should have mammography screening every 1-2 years.[1]

See Public Health Core Indicators for Seattle & King County for more information.

King County and Regions

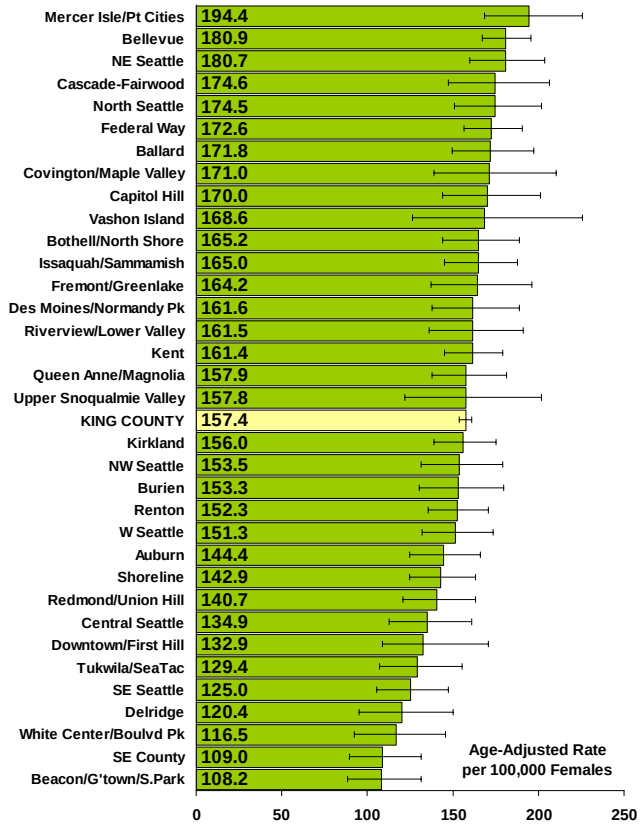
- The age-adjusted breast cancer death rate declined 16% from 1994 to 2003 in King County (data not shown).
- The declining trend was significant in Seattle, the East and North regions, but not in the South Region.
- Averaged over 1999-2003, the death rate in the South Region was 2-3 percentage points higher than the other regions but the differences between the regions were not statistically significant (data not shown).

Breast Cancer Death Rate in King County by Region, Three-Year Rolling Averages, 1994-2003



Data Source: Washington State Department of Health, Center for Health Statistics, Death Certificates
Produced by: Public Health - Seattle & King County, Epidemiology, Planning, and Evaluation

Breast Cancer Incidence By Health Planning Area
King County, Five-Year Average, 1998-2002



Data Source: Washington State Cancer Registry
Produced by: Public Health - Seattle & King County, Epidemiology, Planning, and Evaluation

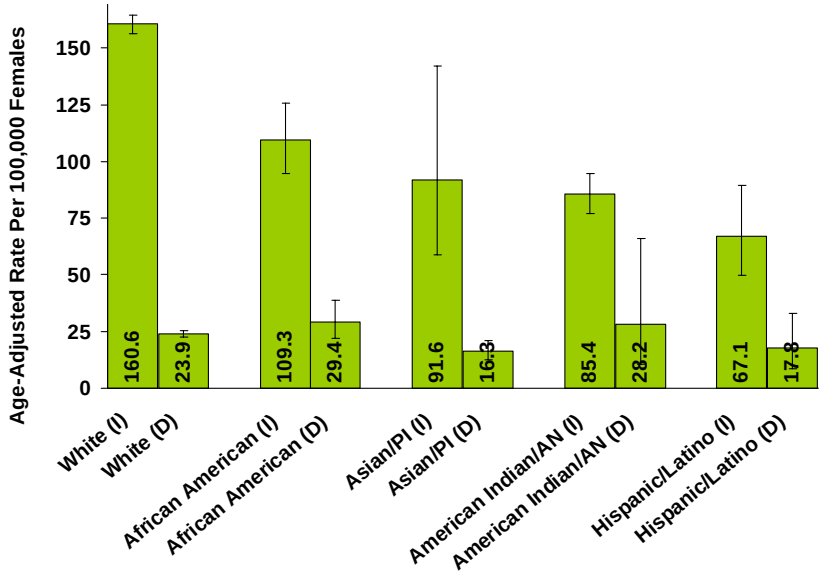
Patterns by Health Planning Area

- None of the health plan areas had a death rate that was significantly different from the King County average rate.
- However, breast cancer incidence rates in Mercer Island/Point Cities and Bellevue were significantly higher than the county average while the rates in Beacon Hill/Georgetown/South Park, Southeast County, White Center/Boulevard Park, Delridge, and Southeast Seattle were significantly lower than the county rate.

Focus on Disparities

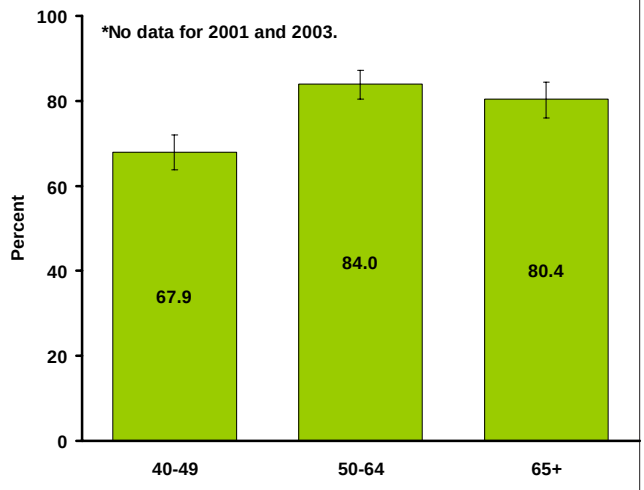
- Although the breast cancer incidence rate for whites was 47% higher than the rate for African Americans, the African American death rate was 23% higher than the white rate.

Breast Cancer Incidence (I - 1998-2002) and Death (D - 1999-2003) Rates in King County by Race/Ethnicity, Five-Year Averages



Data Source: Washington State Department of Health, Center for Health Statistics, Death Certificates and Cancer Registry
Produced by: Public Health - Seattle & King County, Epidemiology, Planning, and Evaluation

Had a Mammogram Within Two Years Among King County Women Age 40+ by Age, Five-Year Averages, 2000-2004*



Data Source: Behavioral Risk Factor Survey
Produced by: Public Health - Seattle & King County, Epidemiology, Planning, and Evaluation

Screening

- In 2004, 74.2% of the King County women age 40 and over had received a mammography screening within two years.
- The screening rate among women age 40-49 was significantly lower than women in older age groups.

* By sexual orientation, women who are lesbian/bisexual had a significantly lower screening rate (2003-2004 average data on "Had a mammogram within two years": 49.5%, 95% CI: 33.9%-65.2%) than heterosexual women (75.0%, 95% CI: 71.9%-77.8%) (data not shown).

References

[1] The U.S. Preventive Services Task Force (USPSTF): Screening for Breast Cancer. February 2002. www.ahcpr.gov/clinic/uspstf/uspsbrca.htm>

Cervical Cancer

Averaged over 1999-2003, there were 15 cervical cancer deaths per year among King County women.

Averaged over 1998-2002, 57 King County women were diagnosed with invasive cervical cancer per year.

The age-adjusted cervical cancer death rate per 100,000 declined significantly from 2000 to 2003 from 2.6 to 1.0.

The five-year relative survival rate for all invasive cervical cancers diagnosed was 72.9%.

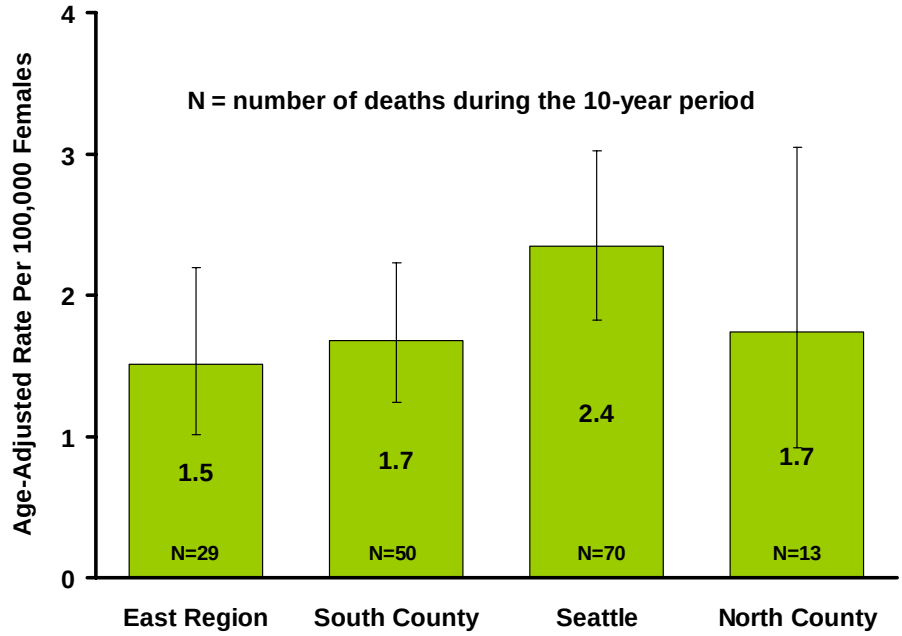
Invasive cervical cancer is potentially preventable through Pap test screening. It is recommended that Pap tests start at age 18 or with sexual activity. After three or more tests with normal findings, the test may be performed less frequently.[1]

In 2004, 83.2% of King County women age 18 and over had received a Pap test within three years.

King County and Regions

- A significant decline in the cervical cancer death rate occurred in Seattle and the North Region but not in the East and the South Regions (data not shown).
- The death rate in Seattle was higher than the other regions but the differences between the regions were not statistically significant.

Cervical Cancer Death Rate in King County by Region
Ten-Year Combined, 1994-2003

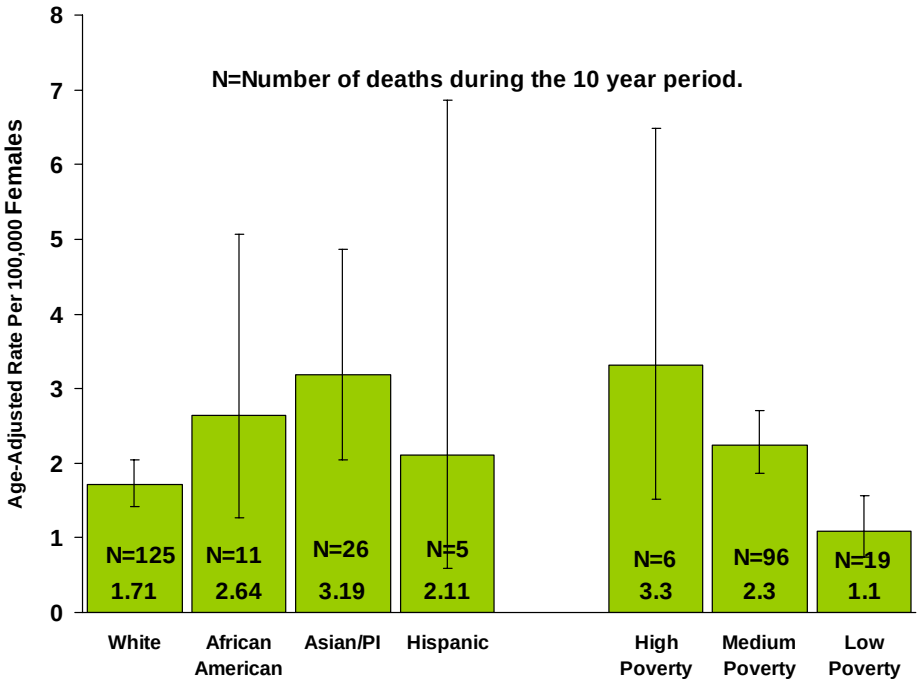


Data Source: Washington State Department of Health, Center for Health Statistics, Death Certificates
Produced by: Public Health - Seattle & King County, Epidemiology, Planning, and Evaluation, 8/05

Focus on Disparities

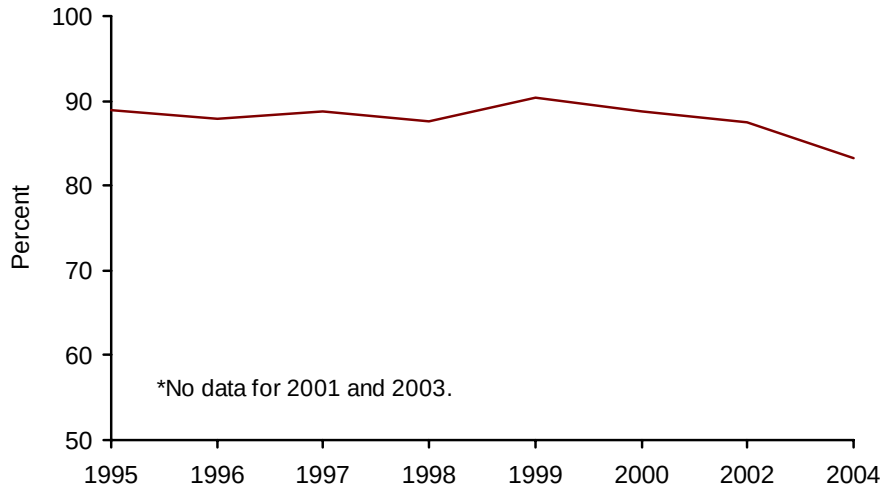
- Asians/Pacific Islanders had a significantly higher death rate than whites.
- High and medium poverty areas had a higher death rate than lower poverty areas.

Cervical Cancer Death Rate in King County by Race/Ethnicity and Neighborhood Poverty Level, 10-Year Combined, 1994-2003



Data Source: Washington State Department of Health, Center for Health Statistics, Death Certificates
Produced by: Public Health - Seattle & King County, Epidemiology, Planning, and Evaluation

Had a Pap Test Within Three Years Among King County Women Age 18+, 1995-2004*

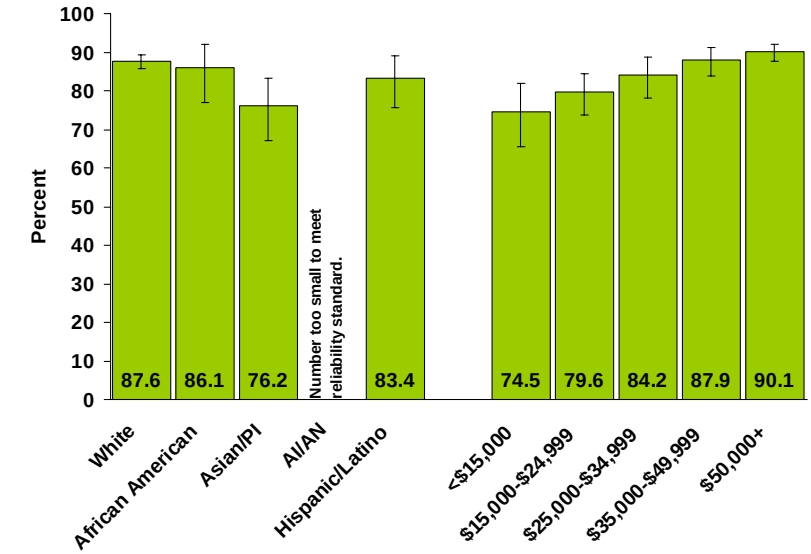


Data Source: Behavioral Risk Factor Survey
Produced by: Public Health - Seattle & King County, Epidemiology, Planning, and Evaluation

Screening

- The Pap test screening rate (screened within three years) declined significantly among King County women between 1999 and 2004.
- Among the four regions, there was no significant difference in the screening rates (data not shown).

Had a Pap Test Within Three Years Among King County Women Age 18+ by Race/Ethnicity and Annual Household Income, 2000, 2002, and 2004 Averages



Data Source: Behavioral Risk Factor Survey
Produced by: Public Health - Seattle & King County, Epidemiology, Planning, and Evaluation

- Asian/PI women and women from lower income households had lower screening rates.

References

[1] The U.S. Preventive Services Task Force (USPSTF): Screening for Cervical Cancer. January 2003. http://www.ahcpr.gov/clinic/uspstf/uspscerv.htm

Prostate Cancer

Prostate cancer is the second leading cause of cancer death in men, after lung cancer.

In 2003, 158 King County men died from prostate cancer.

In 2002, 1,246 King County men were diagnosed for invasive prostate cancer.

Of the prostate cancer deaths between 1999 and 2003, 92% were among men age 65 and older and 74% among men 75 and older.

Of the prostate cancer diagnosed between 1998 and 2002, 63% were among men age 65 and older.

Five-year relative survival rate for prostate cancer is 100%.

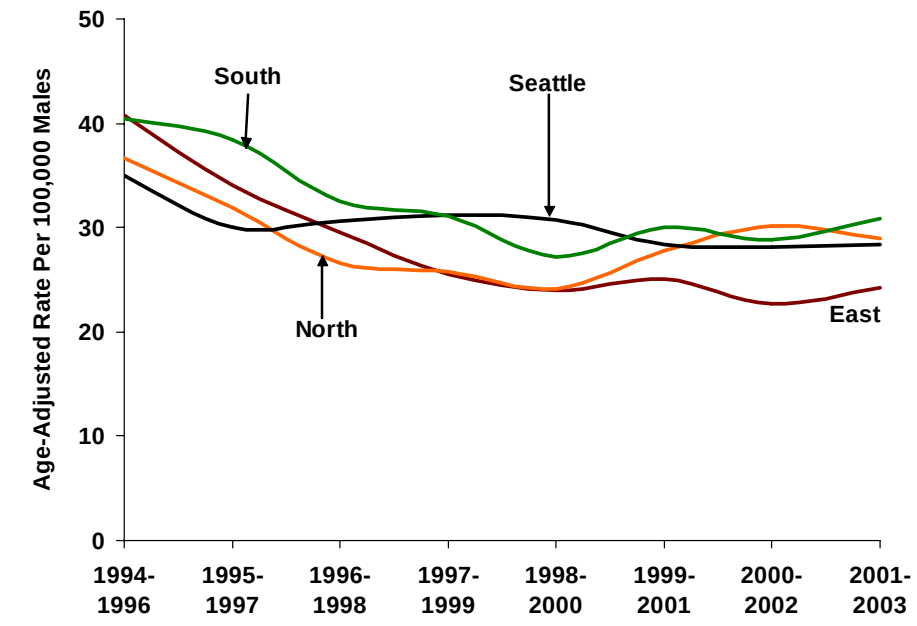
Screening for prostate cancer is still controversial. "The U.S. Preventive Services Task Force concludes that the evidence is insufficient to recommend for or against routine screening for prostate cancer using prostate specific antigen (PSA) testing or digital rectal examination (DRE)."[1]

The American Cancer Society, however, recommends annual screening among men with a life expectancy of at least ten years using both prostate-specific antigen (PSA) blood test and digital rectal examination (DRE) starting at age 50.[2]

King County and Regions

- Between 1994 and 2003, the prostate cancer death rate declined significantly by 38% in King County (data not shown).
- A significant decline in the prostate cancer death rate occurred in all King County regions except the North Region.
- The death rate was the highest in the South Region and the lowest in the East Region but the differences were not statistically significant. The incidence rate in the East Region, however, was significantly higher than the county average, possibly related to its higher screening rate.

Prostate Cancer Deaths in King County by Region
Three-Year Rolling Averages, 1994-2003



Data Source: Washington State Department of Health, Center for Health Statistics, Death Certificates
Produced by: Public Health - Seattle & King County, Epidemiology, Planning & Evaluation

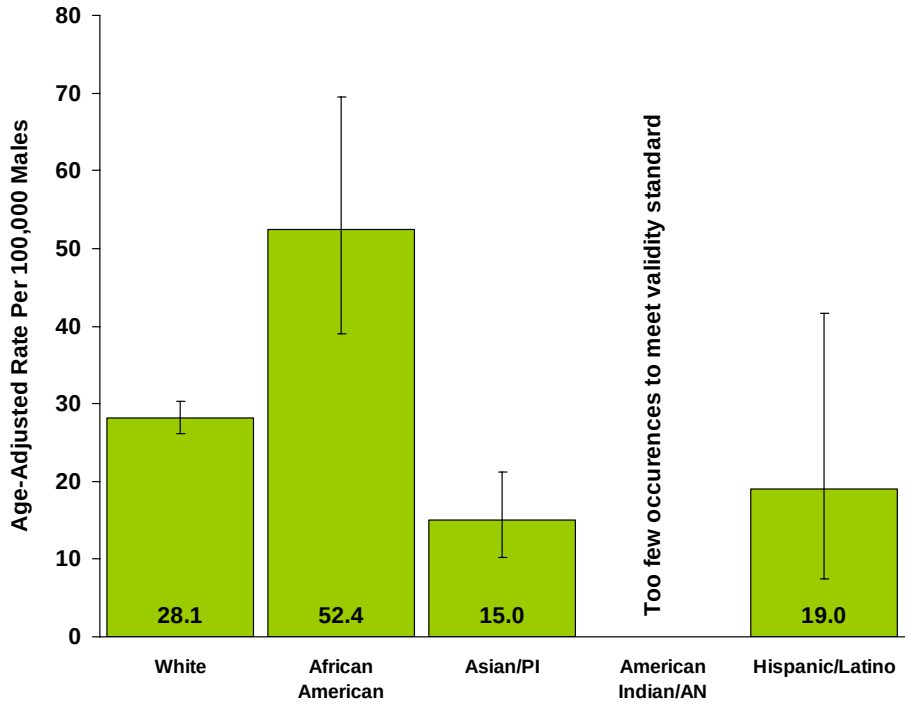
Patterns by Health Planning Area

- Because of the relative small numbers per area, none of the Health Planning Areas had a death rate that was significantly different from the county average. (data not shown)

Focus on Disparities

- Among the racial/ethnic groups, only whites had a significant decline in the death rate (data not shown).
- The death rate for African Americans was 86% higher than the white rate. The death rate among Asian/PI was significantly lower than the white rate. The Hispanic rate was similar to the white rate.
- The incidence rate per 100,000 for African Americans (245.3) was significantly higher than the white rate (178.3). The incidence rates for Asian/PI (89.8), American Indian/AN (67.6), and Hispanic/Latino (75.1) were significantly lower than the white rate.
- There was no significant difference in the prostate cancer death rate among areas with different neighborhood poverty levels. (data not shown)

Prostate Cancer Death Rate in King County by Race/Ethnicity, Five-Year Averages, 1999-2003

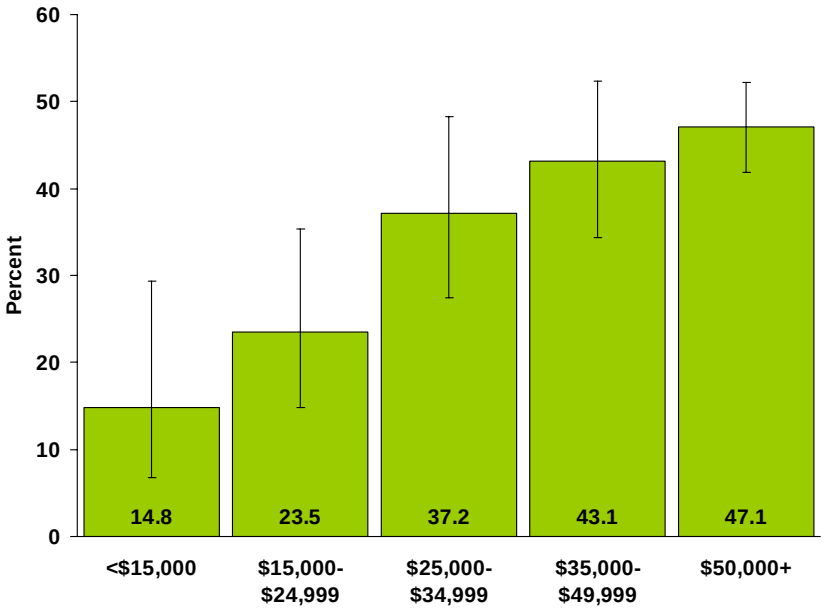


Source: Washington State Department of Health, Center for Health Statistics, Death Certificates
Produced by: Public Health - Seattle & King County, Epidemiology, Planning, and Evaluation

Screening

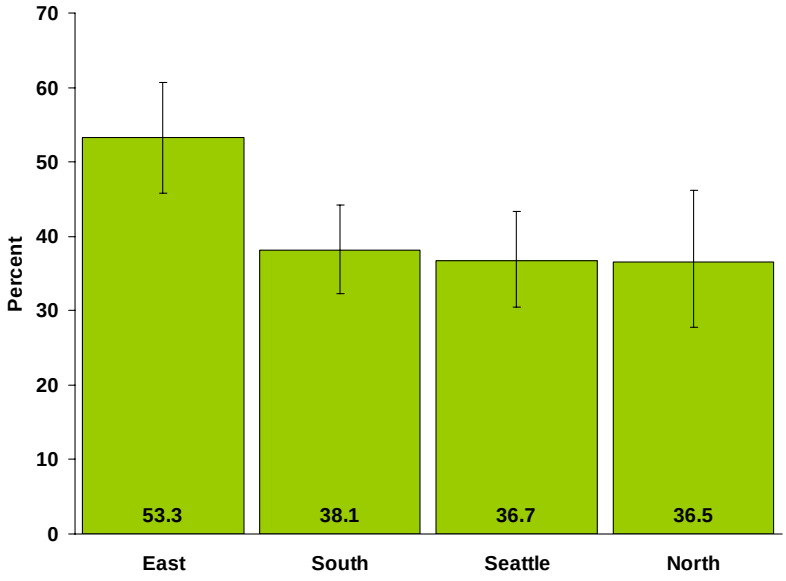
- Averaged over 2001, 2002, and 2004, among King County adults age 50 and over, 49.3% had received a PSA test during the past year, 54.1% had received a DRE during the past year, and 41.0% had received both (data not shown).
- The screening rate for both PSA and DRE is significantly associated with household income.

Had PSA and DRE During the Past Year Among King County Men Age 50+ by Household Income Level, 2001, 2002, and 2004



Data Source: Behavioral Risk Factor Survey
Produced by: Public Health - Seattle & King County, Epidemiology, Planning, and Evaluation

Had PSA and DRE During the Past Year Among King County Men Age 50+ by Region, 2001, 2002, and 2004 Averages



Data Source: Behavioral Risk Factor Survey
Produced by: Public Health - Seattle & King County, Epidemiology, Planning, and Evaluation

- Men in the East Region were more likely to receive prostate cancer screening than men in the other regions.

References

[1] U.S. Preventive Services Task Force: December 2002. Screening for Prostate Cancer. http://www.ahcpr.gov/clinic/uspstf/uspsprca.htm

[2] American Cancer Society. Cancer Facts and Figures 2005. www.cancer.org/docroot/STT/content/STT_1x_Cancer_Facts__Figures_2005.asp

Stroke

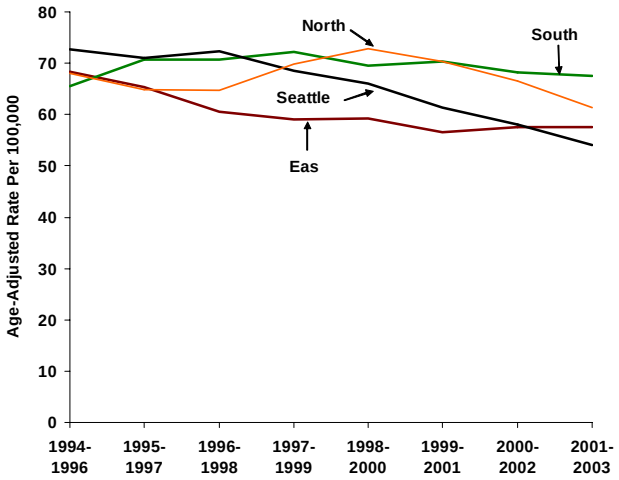
Stroke is caused by an interruption of blood supply to a portion of the brain due to blockage or rupture of the blood vessels to the brain. Stroke is the third leading cause of death and a major cause of disability.The 2004 BRFSS data show that 1.5%, or about 13,000 King County adults had suffered a stroke and the prevalence was 6.6% among older adults age 65 and over.[1] Averaged over 1999 to 2003, there were 3588 stroke hospitalizations per year among King County residents. In 2003, 946 King County residents died from stroke. Stroke shares many of the same risk factors with coronary heart disease, such as hypertension, smoking, and diabetes.

See Public Health Core Indicators for Seattle & King County for more information

King County and Regions

- The stroke death rate in King County declined significantly by 16.6% between 1994 and 2003 (data not shown).
- Among the four regions, only the East Region and Seattle experienced a significant decline.

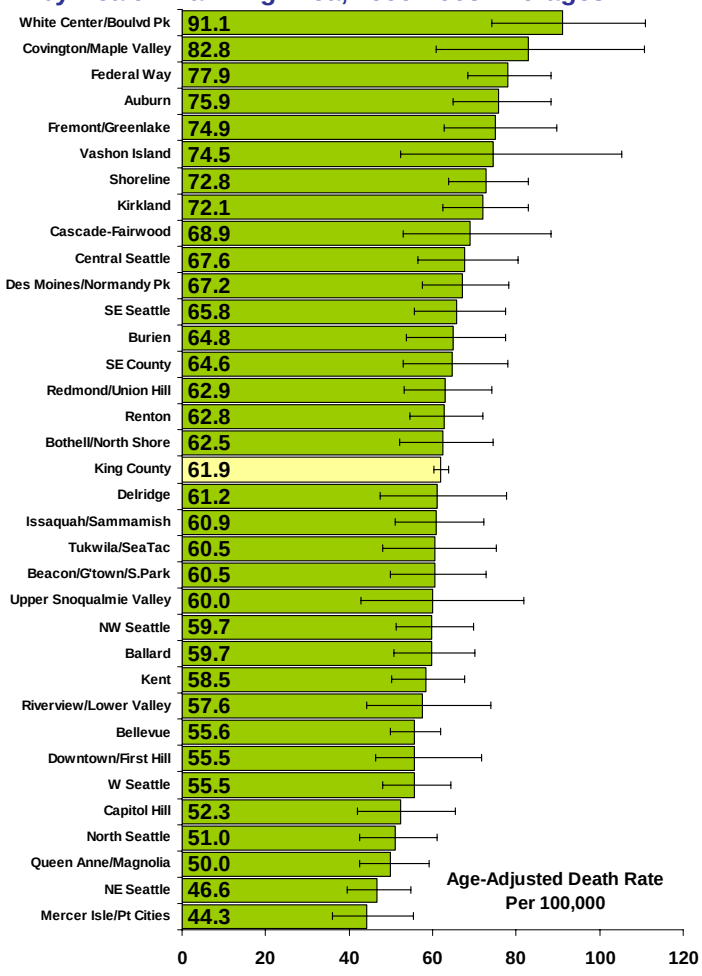
Stroke Death Rate in King County by Region, Three-Year Rolling Averages, 1994-2003



Data Source: Washington State Department of Health, Center for Health Statistics, Death Certificates
Produced by: Public Health - Seattle & King County, Epidemiology, Planning, and Evaluation

- Averaged over 1999 and 2003, the stroke death rates in the East Region and Seattle were lower than the North and the South Regions but the differences were not statistically significantly (data not shown).

Stroke Death Rate in King County by Health Planning Area, 1999-2003 Averages



Data Source: Washington State Department of Health, Center for Health Statistics, Death Certificates
Produced by: Public Health - Seattle & King County, Epidemiology, Planning, and Evaluation

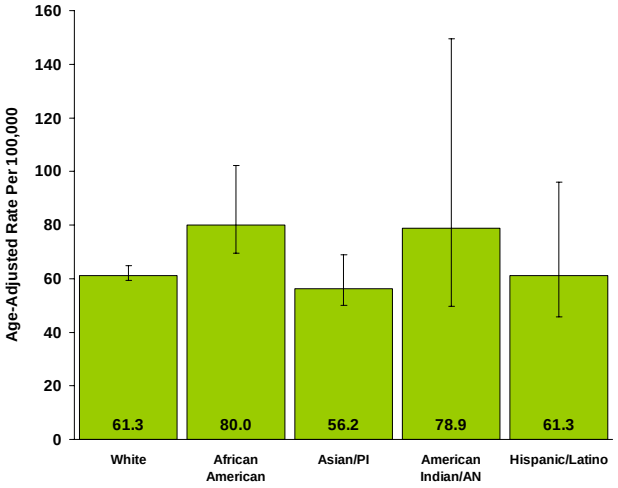
Patterns by Health Planning Area

- White Center/Boulevard Park, Covington/Maple Valley, Federal Way, Auburn, and Fremont/ Greenlake had the highest stroke death rate in King County.
- Areas with the lowest stroke death rate include Mercer Island/Point Cities, Northeast Seattle, Queen Anne/Magnolia, North Seattle, and Capitol Hill.

Focus on Disparities

- African Americans and American Indian/Alaska Natives had a higher stroke death rate than whites, while Asian/Pacific Islanders and Hispanic/Latinos had similar rates.
- Both whites and African Americans experienced a significant decline in the stroke death rate between 1994 and 2003 (data not shown).

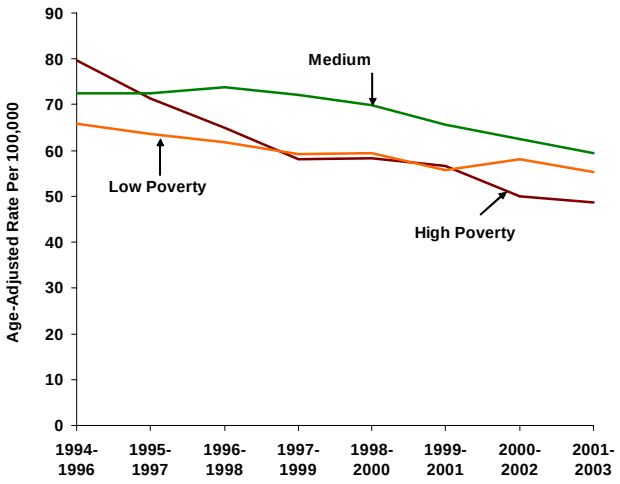
Stroke Death Rate in King County by Race/ Ethnicity, Five-Year Averages, 1999-2003



Data Source: Washington State Department of Health, Center for Health Statistics, Death Certificates
Produced by: Public Health - Seattle & King County, Epidemiology, Planning, and Evaluation

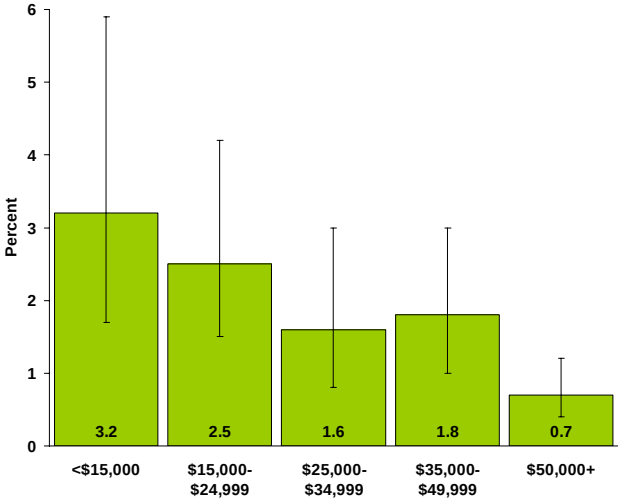
- The stroke death rate in high poverty areas experienced a more significant decline than medium and low poverty areas. The death rate in high poverty areas has become similar to the rate in low poverty areas.
- However, stroke prevalence is higher among lower income adults.

Stroke Death Rate in King County by Neighborhood Poverty Level Three-Year Rolling Averages, 1994-2003



Data Source: Washington State Department of Health, Center for Health Statistics, Death Certificates
Produced by: Public Health - Seattle & King County, Epidemiology, Planning, and Evaluation

Stroke Prevalence Among King County Adults by Annual Household Income, 2001 and 2004 Average



Data Source: Behavioral Risk Factor Survey
Produced by: Public Health - Seattle & King County, Epidemiology, Planning, and Evaluation

References

[1] The BRFSS data do not include institutionalized individuals such as people living in a nursing home and therefore the prevalence rates are likely to be underestimated.

Chronic Lower Respiratory Disease (CLRD)

Chronic Lower Respiratory Disease (CLRD) includes chronic obstructive pulmonary disease (COPD) and asthma. Chronic bronchitis and emphysema are the most common forms of COPD, results in progressive difficulty in breathing.

Between 80 and 90 percent of COPD is attributable to cigarette smoking. Smoking, including secondhand smoking, is also a major risk factor for asthma.

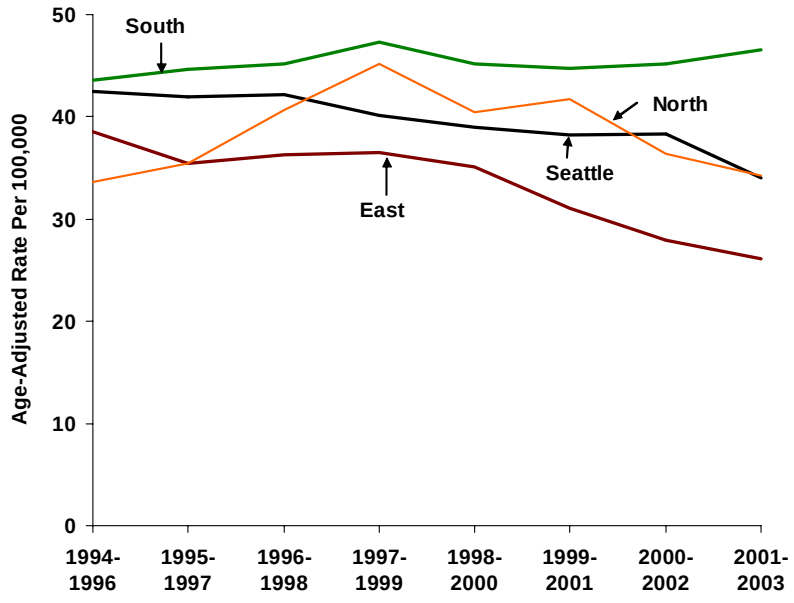
COPD mainly affects older people but asthma is common in both adults and children.

CLRD is the 4th leading cause of death among King County residents.

King County and Regions

- From 1994 to 2003, the CLRD death rate declined significantly by 25% in King County (data not shown).
- By region, the death rate declined significantly in the East Region and Seattle during 1994 to 2003 and during 1999 to 2003. The death rate also declined significantly during 1999-2003 in the North Region.
- Following the pattern in smoking prevalence, the death rate in the South Region was the highest while the East region was the lowest.

CLRD Death Rate in King County by Region, Three-Year Rolling Averages, 1994-2003



Data Source: Washington State Department of Health, Center for Health Statistics, Death Certificates
Produced by: Public Health - Seattle & King County, Epidemiology, Planning, and Evaluation

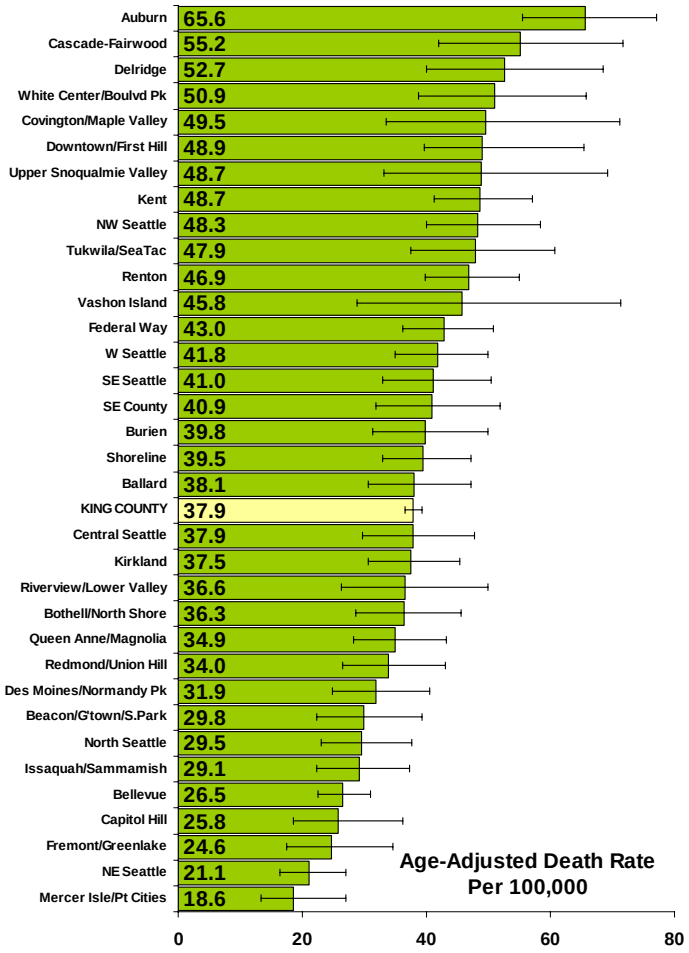
Patterns by Health Planning Area

- Auburn, Cascade-Firewood, and Delridge had the highest death rate while Mercer Island and North-east Seattle had the lowest.

Focus on Disparities

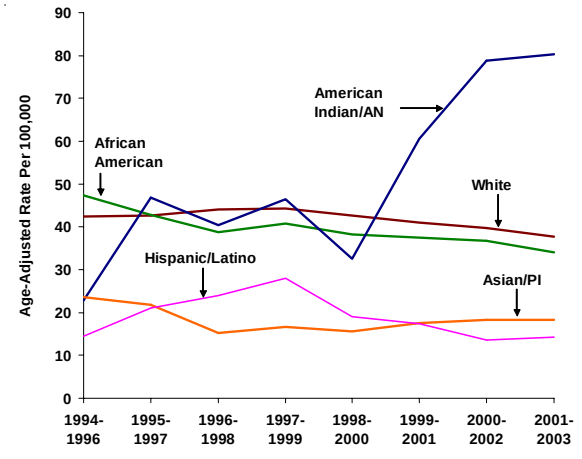
- The death rate among whites and African Americans declined significantly between 1994 and 2003. Three year average rate from 1994-1996 to 2001-2003 for American Indian/Alaska Natives increased 3.5 times but the increase was not statistically significant because of small numbers.
- The 2001-2003 average rate for American Indian/Alaska Natives was 2.2 times the county average rate (data not shown).
- The death rates for Asian/Pacific Islanders and Hispanic/Latinos were significantly lower than the county average rate.
- The death rates in high and medium poverty areas were significantly higher than the rate in lower poverty areas.
- Between 1994 and 2003, only the high poverty areas did not have a significant decline in the death rate (data not shown).

CLRD Death Rate in King County by Health Planning Area, 1999-2003 Averages



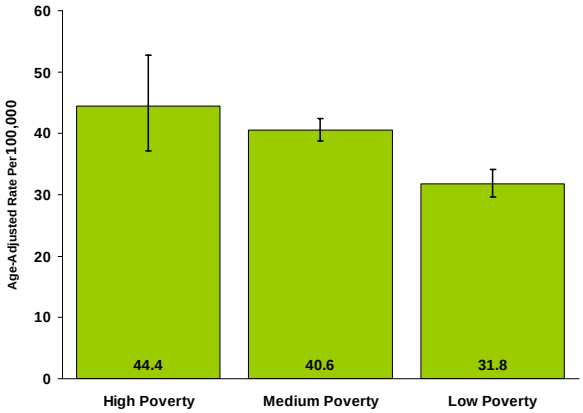
Data Source: Washington State Department of Health, Center for Health Statistics, Death Certificates
Produced by: Public Health - Seattle & King County, Epidemiology, Planning, and Evaluation

CLRD Death Rate in King County by Race/Ethnicity, Three-Year Rolling Averages, 1994-2003



Data Source: Washington State Department of Health, Center for Health Statistics, Death Certificates
Produced by: Public Health - Seattle & King County, Epidemiology, Planning, and Evaluation

CLRD Death Rate in King County by Neighborhood Poverty Level, Five-Year Averages, 1999-2003



Data Source: Washington State Department of Health, Center for Health Statistics, Death Certificates
Produced by: Public Health - Seattle & King County, Epidemiology, Planning, and Evaluation

Diabetes

Diabetes is caused by a decreased ability to produce insulin (Type 1) or an impaired response to insulin (Type 2). Of all diabetics, 90% have Type 2 diabetes.

Without proper treatment, diabetes can lead to serious complications such as kidney failure, blindness, and lower extremity amputation.

Diabetes is the 7th leading cause of death in King County. In 2003, there were 356 deaths with diabetes as the primary cause.

In addition, 610 deaths occurred in 2003 in which diabetes was a contributing cause.

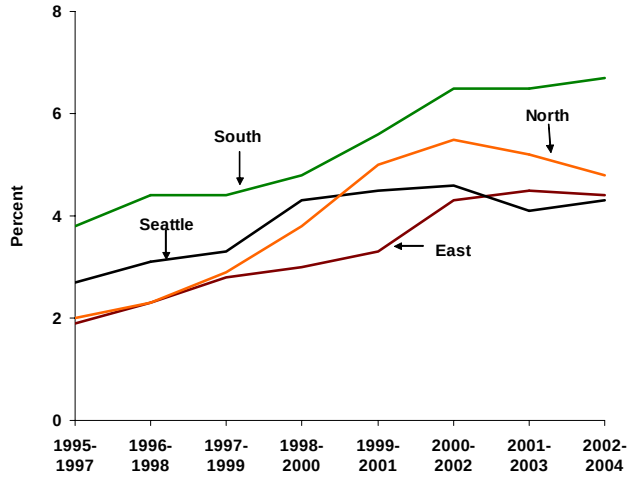
The 2004 BRFSS data show that 5.1% or about 70,000 King County adults have been diagnosed for diabetes.

See Public Health Core Indicators for Seattle & King County for more information.

King County and Regions

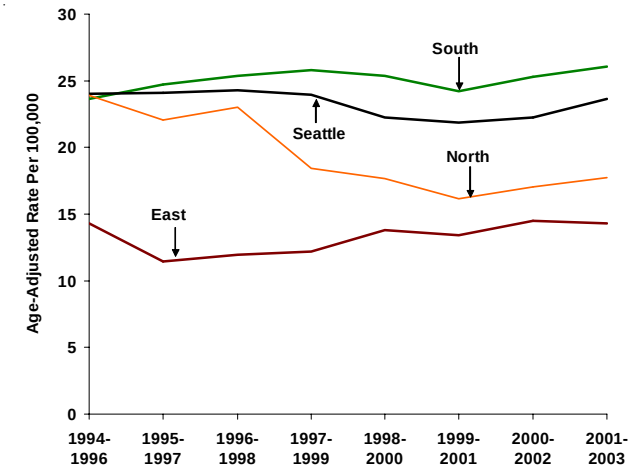
- From 1995 to 2004, the prevalence of diabetes increased 2.9 times in King County (data not shown) and the increase was significant in all four regions.
- Averaged over 2000-2004, the South Region had the highest rate while the East Region had the lowest (data not shown).
- There was no significant change in the death rate between 1994 and 2003 in King County (data not shown).
- The death rates in the South Region and in Seattle were significantly higher than the death rate in the North and East regions.

Diabetes Prevalence Among King County Adults by Region, Three Year Rolling Averages, 1995-2004



Data Source: Behavioral Risk Factor Survey
Produced by: Public Health - Seattle & King County, Epidemiology, Planning, and Evaluation

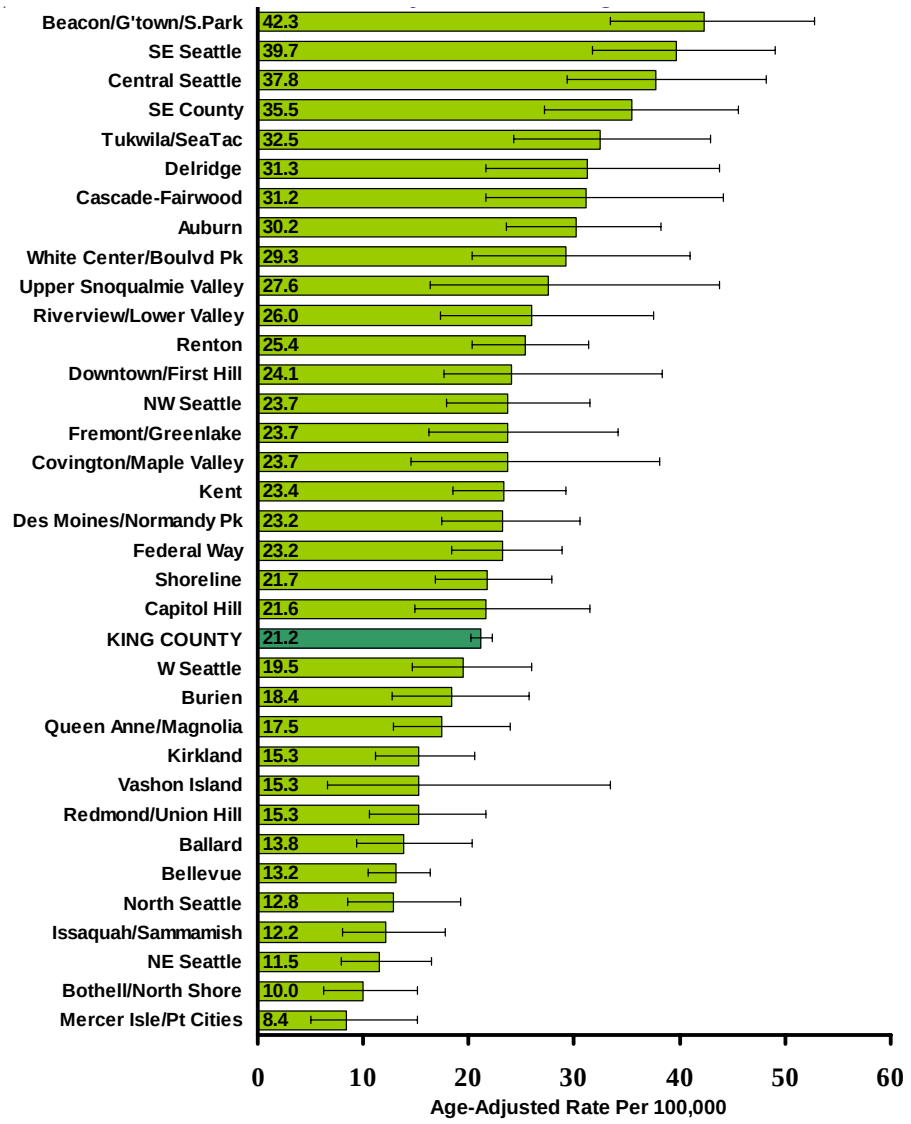
Diabetes Death Rate in King County by Region, Three-Year Rolling Averages, 1994-2003



Data Source: Washington State Department of Health, Center for Health Statistics, Death Certificates
Produced by: Public Health - Seattle & King County, Epidemiology, Planning, and Evaluation

Pattern by Health Planning Area

- Beacon Hill/Georgetown/ South Park, Southeast Seattle, Central Seattle, Southeast County, Tukwila/ SeaTac had the highest diabetes death rates in the county.
- The eastside communities and Northeast Seattle had lower than average death rates.



Data Source: Washington State Department of Health, Center for Health Statistics, Death Certificates
Produced by: Public Health - Seattle & King County, Epidemiology, Planning, and Evaluation, 8/05

Poorly Controlled Diabetes

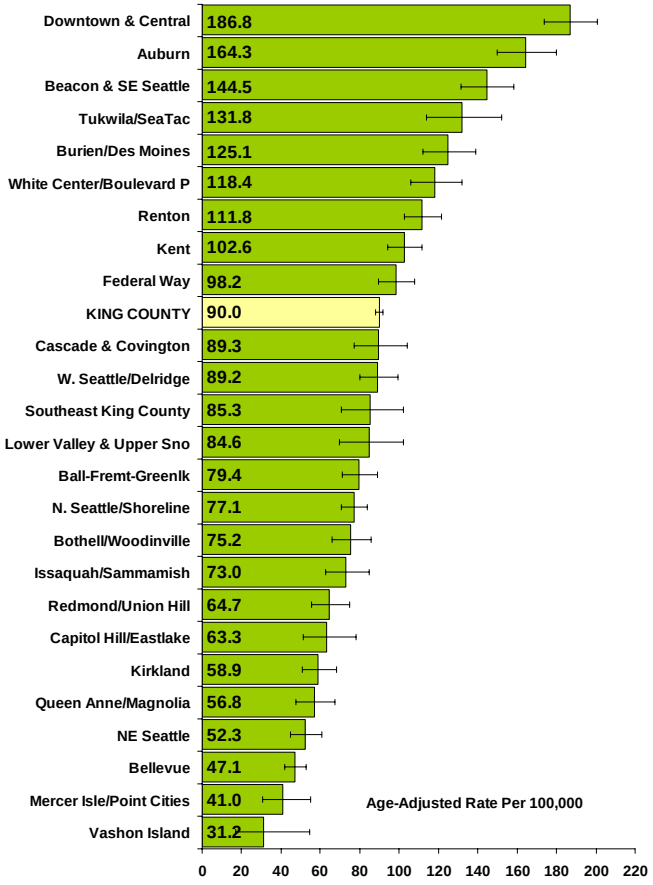
- Hospitalizations for diabetes, especially those with severe complications, such as ketoacidosis or coma, indicate the disease is poorly controlled.
- In 2003, there were 1,672 hospitalizations for diabetes among King County residents, including 626 for ketoacidosis or coma.
- The hospitalization rate for diabetes and for ketoacidosis or coma increased significantly from 1994 to 2003 (data not shown).
- The diabetes hospitalization rates in Downtown/Central Seattle, Auburn, Beacon/ Southeast Seattle, Burien/Des Moines, Tukwila/SeaTac, White Center/Boulevard Park, Renton, and Kent were significantly higher than the county average rate.

- Eastside communities, Vashon Island, Northeast Seattle, Queen Ann/Magnolia, Capitol Hill/Eastlake, North Seattle/Shoreline had lower than average hospitalization rate.

Focus on Disparities

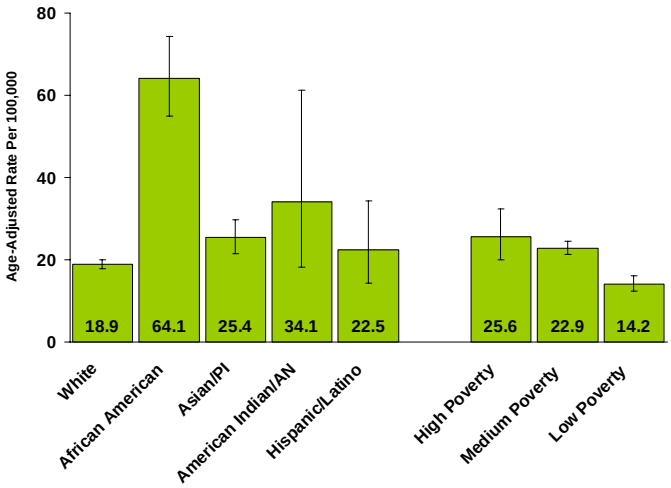
- American Indian/Alaska Natives and African Americans had substantially higher prevalence rate than the other racial/ethnic groups but the differences were not statistically significant because of small sample sizes in the BRFSS data (data not shown).
- People from lower income households had significantly higher prevalence than people from higher income households (data not shown).

Hospitalization for Diabetes, King County, 1999-2003 Average



Data Source: Washington State Department of Health, Center for Health Statistics, CHARS
Produced by: Public Health - Seattle & King County, Epidemiology, Planning, and Evaluation

Diabetes Death Rate in King County by Race/ Ethnicity and Neighborhood Poverty Level Five-Year Averages, 1999-2003



Data Source: Washington State Department of Health, Center for Health Statistics, Death Certificates
Produced by: Public Health - Seattle & King County, Epidemiology, Planning, and Evaluation

- The death rates had similar racial/income disparities. The African American rate was 3.4 times the white rate while the American Indian/Alaska Native rate was 1.8 times the white rate.
- A clear gradient by income levels in the death rate is also observed.

Chronic Liver Disease and Cirrhosis

Cirrhosis, the scarring of the liver, is the final nonreversible outcome of chronic liver damage most often caused by excessive alcohol consumption and hepatitis. In this report, the terms “chronic liver disease” and “cirrhosis” are used interchangeably. Each of the terms includes all forms of chronic liver disease.

In the United States, cirrhosis is the 12th leading cause of death.

In 2003, the age-adjusted death rate for cirrhosis was 8.7 per 100,000 with 154 deaths.

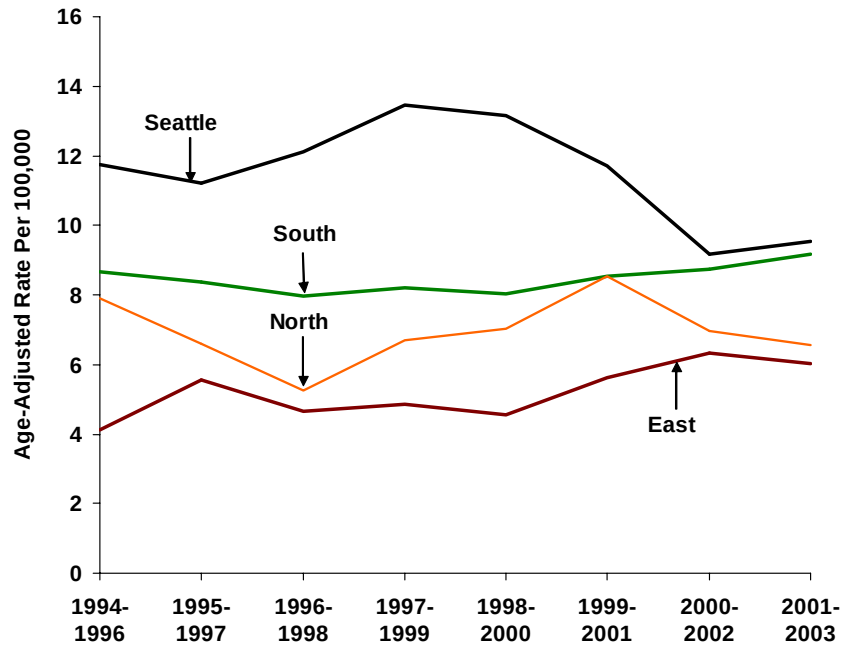
There was no significant change in the death rate during the past 10 years.

During 1999-2003, alcoholic liver disease accounted for 78.7% of the deaths from chronic liver disease.

King County and Regions

- Although the overall death rate was unchanged from 1994 to 2003 in King County (data not shown), a significant increase in cirrhosis death occurred in the East Region, although it continued to have the lowest death rate among the four regions.
- Seattle had the highest death rate among the four regions, although the gap in the death rate between Seattle and the other regions narrowed in recent years.

Chronic Liver Disease Death Rate in King County by Region, Three-Year Rolling Averages, 1994-2003



Data Source: Washington State Department of Health, Center for Health Statistics, Death Certificates
Produced by: Public Health - Seattle & King County, Epidemiology, Planning, and Evaluation

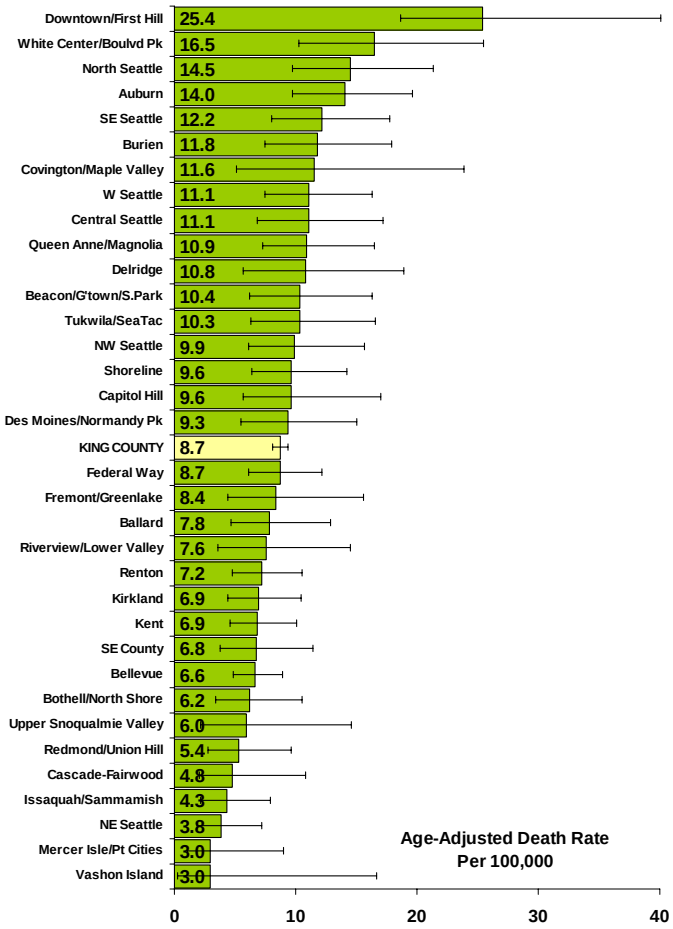
Patterns by Health Planning Area

- The death rate in Seattle's Downtown/First Hill area was 2.9 times the King County rate. The death rates in White Center/Boulevard Park, North Seattle, and Auburn were also significantly higher than the county average.
- The lowest death rates were in Mercer Island/Point Cities, Northeast Seattle, and Issaquah/ Sammamish.

Focus on Disparities

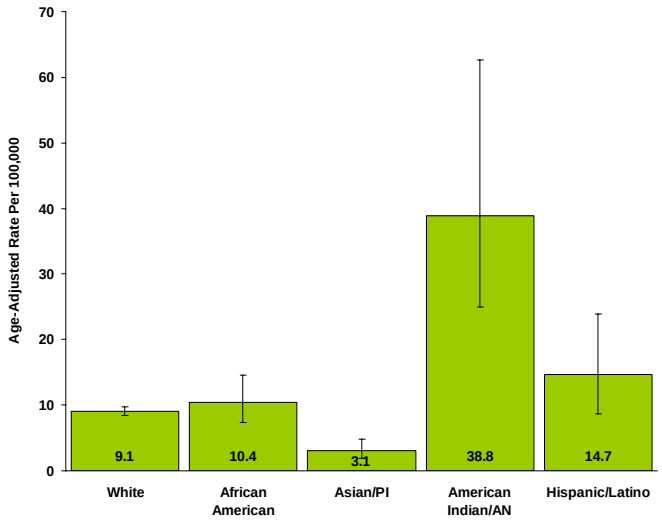
- Averaged over 1999-2003, the death rate for American Indian/Alaska Natives (38.8) was 4.5 times the county average. The Hispanic rate (14.7) was 1.7 times the county average but the difference was not statistically significant because of relative small numbers. The white and African American rates (9.1 and 10.4 respectively) were similar to the county average.
- Although the death rate for Asian/Pacific Islanders (3.1) was only about one-third of the county average, the death rate increased significantly between 1994 and 2003 (data not shown).
- The death rates in high and medium poverty areas were 3.0 and 1.6 times higher respectively than the rate in low poverty areas.

Chronic Liver Disease Death Rate in King County by Health Planning Area, 1999-2003 Averages



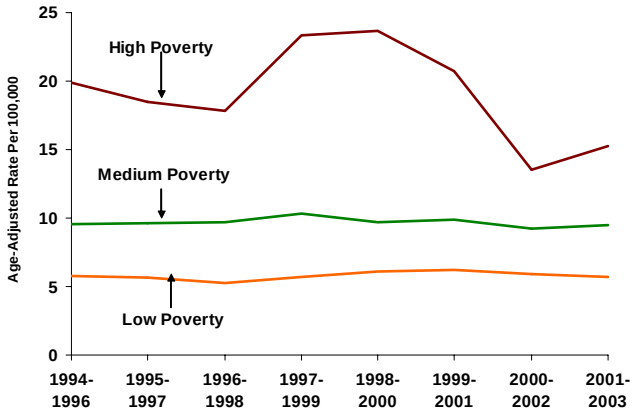
Data Source: Washington State Department of Health, Center for Health Statistics, Death Certificates
Produced by: Public Health - Seattle & King County, Epidemiology, Planning, and Evaluation,

Chronic Liver Disease Death Rate in King County by Race/Ethnicity, Five-Year Averages, 1999-2003



Data Source: Washington State Department of Health, Center for Health Statistics, Death Certificates
Produced by: Public Health - Seattle & King County, Epidemiology, Planning, and Evaluation

Chronic Liver Disease Death Rate in King County by Neighborhood Poverty Level Three-Year Rolling Averages, 1994-2003



Data Source: Washington State Department of Health, Center for Health Statistics, Death Certificates
Produced by: Public Health - Seattle & King County, Epidemiology, Planning, and Evaluation